Managing flood risk in Camden

The London Borough of Camden flood risk management strategy

Camden

both 1975 and 2002.

The probability of such events hap grow as climate change increases weather. While Camden will not se as other parts of the country, whe impact could be serious due to th populated nature of the borough.

Flooding can have major economic 2002 floods caused over £1million even taking into consideration the These costs can include serious sc unable to return to their homes and suffering stress as a result.

For this reason reducing the long-term risk of flooding is not only also an important task, not just for the Council but for everyone. I one organisation can do on its own, because it needs co-operati businesses and households.

Taking effective steps to reduce flood risk, especially at a time of l evidence based assessment to ensure that efforts and resources Some areas identified as being at risk may not have flooded in livi weather patterns and the landscape of an area could alter this an steps now to identify and tackle future problems.

This strategy highlights both the good work we have already done the steps we are looking to take. It is impossible to ensure that ho practical steps can be taken to reduce both the likelihood of seve and also the impact of any flooding that does occur.

A public consultation ran during February and March 2013. This w which helped us to better understand the areas with flooding and want considered as we manage flood risk in Camden.

While flooding is not, and hopefully never will be, an issue that is residents, the actions detailed in this strategy will ensure that if an are as prepared as we reasonably can be.

objectives:

n the level of risk affecting the residents and businesses of

for areas at particular risk from surface water flooding

ıat all partners, businesses and residents in Camden should be sk

l holistic approach to flood management, seeking to deliver wider benefits.

level of risk

ı is from surface water flooding. Surface water flooding occurs ty of a rainfall event exceeds the capacity of the drainage of the two major flooding incidents in Camden in 1975 and 2002.

‹ of groundwater flooding which occurs when the water table ıdates low lying areas.

ɡ from the Regent's Canal and the Hampstead Heath Ponds ch in the ponds the effects would be severe. Responsibility for e Ponds lies with the Canal & River Trust and the City of London mden is at no risk of flooding from rivers or the sea.

ıs at particular risk

ıg actions to mitigate the risk of flooding, Camden has been th, South and West.

the areas surrounding Hampstead Heath east of Spaniards ge, Gospel Oak, Dartmouth Park and Highgate).

est and South Hampstead as well as Kilburn.

large area starting in Belsize Park and Camden Town and going lborn and St Giles' Circus.

actions have been identified to manage the flood risk in the area. actions planned for each of these areas to reduce the level of ions are subject to funding being awarded through partnership

Camden North	Delivery of Project Appraisal Reports for Gospel Oak Hampstead
Camden North	Begin investigation of Royal Free Hospital flood risk
Camden North/ South	Complete modelling of Thames Water sewer system and South Camden
Camden West	Complete Project Appraisal Report for West Camde
Camden North	Complete consultation on preferred option of Hamps
Camden North	Submission of Detailed Planning Application for Ham Ponds by City of London
Camden North	Finish assessment of Royal Free Hospital flood risk
Camden South	Maintenance of Primrose Hill siphon

Actions to manage risk

As well as taking specific action to remedy recognised flood risk, actions that are necessary for flood risk management such as pre increasing, improving our understanding of flood risk and ensurin respond should a flood event occur. Table 2.2 highlights the key a been taken to achieve these goals and what more will be done.

Table 2.2 Actions to improve flood risk mana

Area	Action already taken	Actions to
Understanding more about risk	• Production of Preliminary Flood Risk Assessment • Extended modelling of the borough	• Flood ir major n • Produc Flood F
Recording and maintaining assets	• Regular maintenance of assets that affect flooding	• Publica most si borougl • Designa to ensu current
Responding to	• Development of Multi-Agency	

ve impact may have led to an increase in the risk groundwater

at is rare in Camden but when it does occur the impact can be at everybody is prepared for it

rease our knowledge of where there is a risk of flooding so that at risk. Without that knowledge we cannot take action.

individual property level where will be affected by flooding and at suggest we can.

mme of work to improve flood risk where practical affordable

strategy was the first step in engaging with residents about es will be consulted on through existing groups so as to ensure about what is planned and raise their concerns early on, in the oblem.

strategy itself, all planned schemes will be consulted on through ure that people are able to hear about what is planned and raise e context of addressing the problem.

onmental and social benefits

environmental activity and the strategy needs to support both ustainable development i.e. development which recognises the iic and environmental needs and ensure that it can satisfy the sure that future generations can also look forward to the same

ey national plans such as the Water Framework Directive and the sment (SEA) directive, as well as local plans such as Camden's olan (2011-2020) Green Action for Change.

	Department for Environment, Food and Rural Affairs

PFRA	Preliminary Flood Risk Assessment
CPG	Camden Planning Guidance

Terms	
Adoption (of SuDS and watercourses)	The process of taking ownership associated responsibilities.
Asset record	A database of designated local floo of assets across Camden, available
Asset register	A database of designated assets information on each asset and c Management Authorities.
Designating (of flood or coastal erosion assets)	If an asset becomes 'designated or remove it without first consult management authority.
Drain London	A project by the Greater London Au Local Flood Authorities in London t around understanding flood risk.
Flood hazard map	Maps which show the flood exte and where appropriate the flow water flow for a particular rainfall
Flood risk management plan	A requirement of flood risk regul each of the 10 indicative flood ri beginning in 2015.
Flood risk map	Map which shows the potential a particular rainfall event includir affected as well as infrastructure
Groundwater	All water which is below the surf direct contact with the ground o
Indicative flood risk area	10 large urban areas which have the largest cumulative risk of sur Camden is part of the Greater L Area.
Initial assessment	A high level study to determine v be suitable for flood alleviation s Assessment is successful then a each location will be commissio

	business case for partnership funding.
	District and borough councils, lead local flood authorities, the Environment Agency, water companies, highways authorities and internal drainage boards.
	A tube in an inverted U shape which causes a liquid to flow uphill, above the surface of the reservoir, without pumps.
	Rainwater (including snow and other precipitation - which is on the surface of the ground (whether or not it is moving), and has not entered a watercourse, drainage system or public sewer
	Drainage systems which look to store rainwater on site before slowly draining out to the ground and sewer system. This helps to prevents surface water and sewer flooding and can also bring amenity and water quality benefits

ement Act, 2010, gave the Council strategic responsibility for
orough. This Flood Risk Management Strategy (FRMS) explains
ers will manage flood risk. It identifies the likelihood of flood
esponsibilities all stakeholders have to manage it. It also states
e risk of flooding in areas at greatest risk.

ategy will help to reduce the risk of flooding but cannot stop
olders will work to decrease both the probability and the impact
pen. This is why it is important that all residents, businesses and
f their responsibilities. Information about their responsibilities will
and can be found in Appendix C.

ves

are as follows:

n the level of risk affecting the residents and businesses of

for areas at particular risk from surface water flooding

at all partners, businesses and residents in Camden should be
sk

l holistic approach to flood management, seeking to deliver wider
benefits.

3) Decisions on where local resources are focused should be evi
against clear criteria.

4) Improving the level of knowledge about flood risk across all st
which needs to be continued.

5) No single organisation can effectively manage flood risk alone
from public agencies, the private sector and households.

4.3 Why are we doing this?

Camden was fortunate to avoid the national floods of 2007, whicl
homes and businesses across the UK and caused £3 billion wort
a serious risk flooding is. After the 2007 floods, the Flood and Wa
was introduced to provide legislation for the management of risks
and coastal erosion.

The Flood and Water Management Act gives the Council two new
are now the Lead Local Flood Authority (LLFA) for our area, with a
risk management duties, as well as the SuDS Approval Body, resp
drainage implications of new building developments.

In our role as the LLFA, we must develop, maintain, apply and mo
manage surface runoff and groundwater flooding in Camden.

Appendix A provides information about other documents which a
and Appendix B provides a brief guide to other Acts that are relev
management.

A review of the strategy will take place by December 2015 in cons
stakeholders. A fuller review with public consultation will then take
Greater London Flood Risk Management Plan 2021. In the event
incident or a significant change in the legislation, the timing of this

4.4 Supporting the environment

Flood risk management is an environmental activity and the strate
local and national plans for sustainable development (i.e. develop
interlinking of social, economic and environmental needs) and ens
needs of today while making sure that future generations can also

stakeholders have been identified:

s

/Transport for London

on

roughs

w of stakeholders' responsibilities. The responsibilities of
l be published on the Camden website.

with stakeholders on project appraisal reports

studies for flood alleviation schemes for Hampstead Town
e the potential risk of surface water flowing off Hampstead
s south of it. While this would only happen in an extreme
al impact is significant enough for it to be worth investigating
ion could take place.

lity study, we have worked with the following stakeholders:

Corporation which is responsible for the Hampstead Heath
ans for changes to the ponds have fed into the feasibility

manages the London Overground line which would be
his event

h is providing important information about the drainage

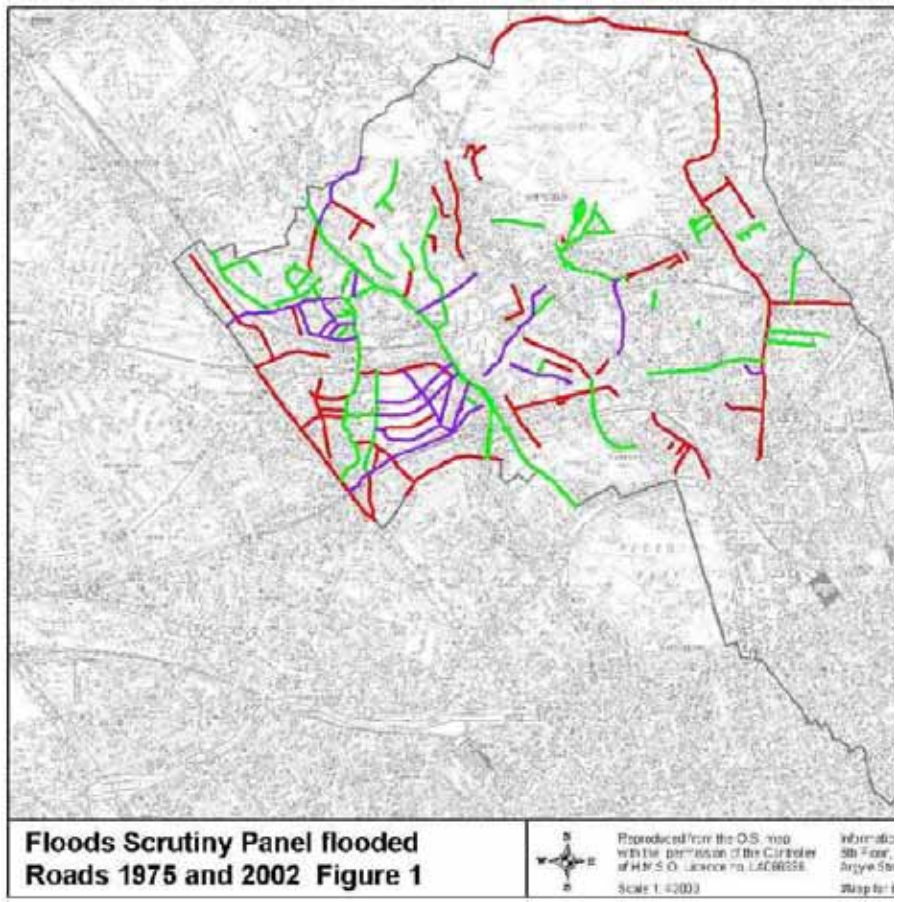
ency, which has expertise in flood risk management and
the scheme

ich is advising on ensuring any changes preserve the
outh Park Hill conservations areas

arties together early on in the development of the plans,
entify potential problems as well as opportunities to link the
rojects in the area. This gives us the confidence that, when

The 1975 flood was caused by a severe storm between 5.30pm
1975. It caused extensive flooding in West and South Hampstead
Kentish Town, Belsize Park and Camden Town. It was the heavies
rainfall event since records began for this part of Camden, with 1
half hours. The drainage capacity of drain pipes, road gullies and
with the volume of surface water runoff involved.

Fig. 5.1 - Map of flooded roads in 1975 and 2002 floods



The 2002 flood was less severe but still saw 60mm fall in just unc
evening of 7 August 2002. This rainfall event had a 1% chance of
in 100 year return period. The resultant flooding inflicted consider
residents and their homes, public services and facilities, and priva
the flooding occurred north of the Euston Road, and primarily in V

nts such as 1975 and 2002.

ooding in Camden is uncertain and more information is required
of it. Groundwater flooding occurs when the water table rises
undates low lying areas. There are a small number of recorded
oding in basements and cellars. This has become more prevalent
infall of 2012-13 but much of it may still be unrecorded. The
olished a map of areas most susceptible to Groundwater (Map 4
re have been several reports of flooding in areas not included in

r main pipes bursting, causing flooding as happened in July
These are not caused by rainfall events and are the responsibility
ain the water supply network in Camden.

s of water

m rivers or the sea, Camden does have a number of water bodies
he Regent's Canal is owned by the Canal and River Trust (see
dentified as low risk in the Camden Multi-Agency Flood Plan.

n Islington is a covered service water reservoir owned by Thames
sk to Camden residents if there was a breach. Thames Water has
Maiden Lane to be low. It is regularly checked and should any
afely and rapidly emptied before any off site response is required.

s consist of two chains of earth banked reservoirs and ponds
th and are predominately owned by the City of London
itage. All are managed by the City of London Corporation, except
hgate Chain which are managed by English Heritage.

Corporation has identified that there is the potential for significant
nt that one of the major dams on either of the chains were to
site emergency plan has been developed by the City of London
reduce this risk is currently being considered by the City of
20.

d a number of rivers including the Fleet and the Tyburn running
orated into the sewerage system in the 19th century. More
t rivers can be found on the website www.camden.gov.uk.

important that any significant flood events are fully investigated as

Modelling surface water flood risk

We have commissioned extensive modelling to fully understand th
to the borough. This is not detailed enough to determine which in
affected, but can be used to identify areas where we should focus
always be factors that cannot be captured on a model which will
accurate to property level.

This modelling process was begun by Drain London, the GLA pro
understanding of surface water flood risk in Greater London. Drai
Preliminary Flood Risk Assessments and Surface Water Manager
borough. This process helped provide a consistent baseline acros
Camden has now expanded on with its own detailed modelling (s
the Flood Risk in Camden).

In addition to this modelling, Camden will be undertaking work to
under the Flood Risk Regulations 2009. Camden completed the I
Assessment in December 2011. As part of the work to develop th
Assessment, Greater London was identified as one of the 10 maj
zones in England.

As a result, Flood Hazard and Flood Risk Maps for Greater Londo
by December 2013. Camden is in discussion with the Environmer
maps and will agree both the information shown and the level of
they are published.

There is also a requirement for a Flood Risk Management Plan fo
published in December 2015. The Department for Environment a
been consulting on how this should be produced and will publish
will be delivered in 2013.

were done at a pan-London level, they were unable to
iation. For example in Camden, the drainage capacity is
he country due to the incorporation of the river Fleet into the

d with
e a model
ted not
r above the
nage system
the first
ch advanced
ovided the
ecure funding
oth the north
. As a result
ed modelling,
one of the
see a flood
ht in to tackle

Fig 5.2 Model of a 1.33% probability storm

reports

onsibility to produce a flood investigation report for any

od event is significant or not is at the discretion of the LLFA.
owing two criteria should be met:

ternal flooding of a property

nding the source or responsibility of the flood (e.g. it is not clearly
s pipe)

action must be taken by the responsible parties and we cannot fo
action. However the investigations can act as a catalyst for chang

Flood Investigation Reports will normally be published on our web
an incident being reported to us. However, there may be cases w
extended (e.g. widespread flooding across the borough).

6. Delivering flood risk alleviation s

There is no obligation on any organisation to deliver flood defence
residents or businesses that are at risk of flooding.

New developments should be designed to be resilient to major flo
receive any government support for flood mitigation schemes in th
homes and offices, there is limited central government funding av
mitigation projects when there is a strong benefit to cost ratio.

6.1 Funding flood risk alleviation schemes

DEFRA plans to spend £1billion over 4 years (2011-2015) on cap
system called Partnership Funding whereby all flood risk alleviatio
fixed subsidy based on the benefits delivered by the scheme. Foll
was increased by a further £120 million.

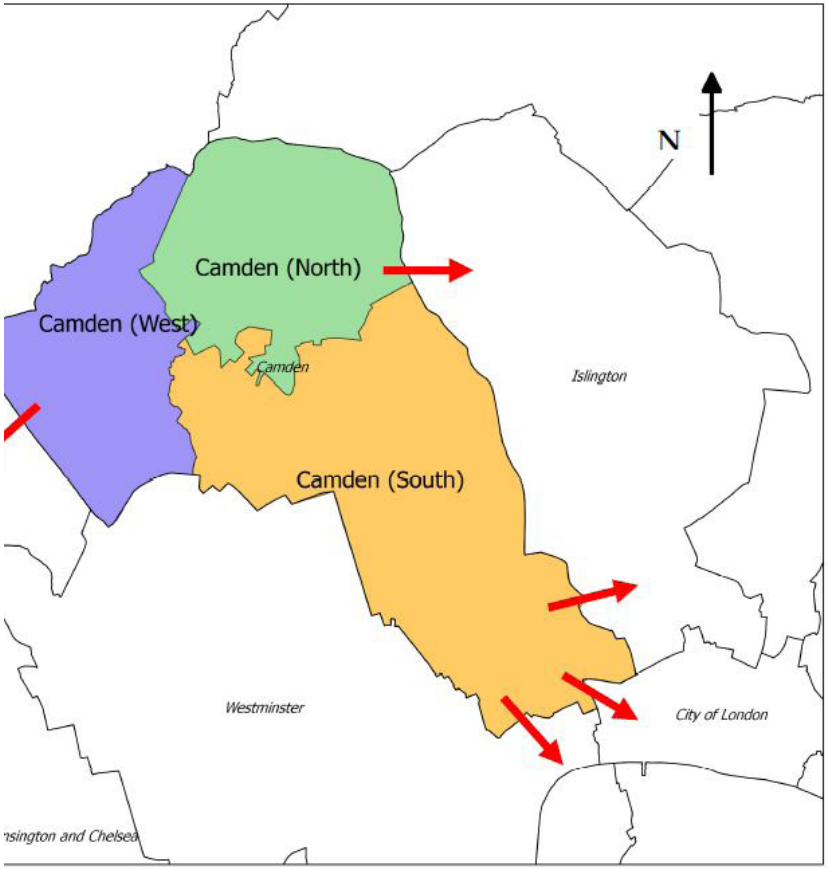
In order to access this funding, the Council must apply to the Env
Regional Flood and Coastal Committee with schemes to reduce f

If the funding provided is enough for the scheme to go ahead, the
funding is required then the Council will either have to reduce proj
sources of funding. Alternative sources of funding include private
and businesses that would benefit from the scheme, Thames Wa
fits with their plans to alleviate flood risk from sewer flooding or th
is a fund that all local authorities in the Thames region pay into.

The purpose of the partnership funding model is to promote furth
than simply have a greater number of accessible public funding s
encourage communities to take more responsibility for the flood r
to deliver more benefit by encouraging total investment to increas
DEFRA alone can afford.

ıd (i.e. Hampstead Village, Gospel Oak, Dartmouth Park and
overs a large area starting in Belsize Park and Camden Town and
Holborn and St Giles' Circus. Camden West covers West and
Kilburn.

en flood areas and flows into neighbouring boroughs



n schemes in Camden North

water runoff in an extreme rainfall event, and to a lesser extent,
nds overtopping or breaching. The Royal Free Hospital is a piece
n has been recognised as being at risk from flooding.

place in the north of the borough is surface water flooding.
ıere is a risk that, in an extreme rainfall event, water will rush
ificant flooding at the bottom.

Willow Road area	Hampstead Town
Pond Street area	Hampstead Town
Haverstock Hill area	Hampstead Town
Mansfield Road area	Gospel Oak
Gordon House Road area	Gospel Oak
York Rise area	Highgate
St. Albans Road area	Highgate
Highfields Grove area	Highgate
Dartmouth Park Hill area	Highgate

6.3.1 Gospel Oak

The Gospel Oak area was subject to surface water flooding in 19
identified the Gospel Oak area as the highest risk area in North C

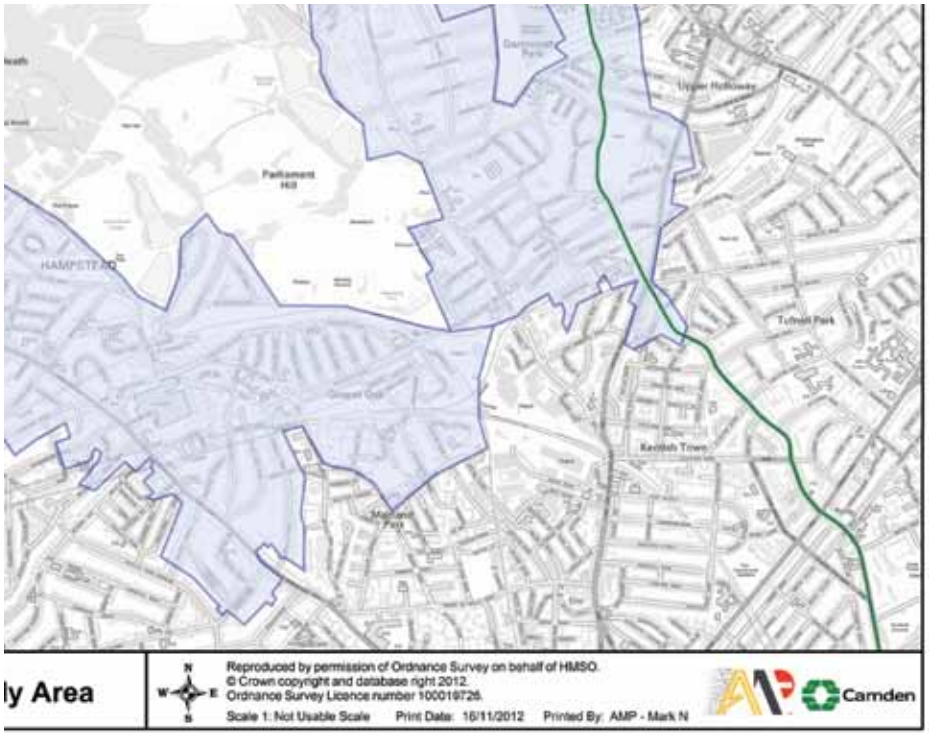
The council produced preliminary work for flood mitigation scheme
showed that, due to the flood relief sewer constructed in 1987, the
reduced. While there is still some residual flood risk in the area, it is
originally believed. This is confirmed by the lack of significant floodi
nearby South End Road was heavily flooded.

Due to the reduced number of properties at risk, a flood alleviation
based solely on the number of properties. However the London Ov
and Camden will have discussions with Network Rail and London
the investigation of a joint project involving source control on Hamp
consider property level protection where appropriate.

6.3.2 Hampstead Town

This area covers a range of different locations to the west and sou
Enhanced modelling estimates large numbers of properties may b
and Significant risk bands. Flooding is generally caused by direct
surfaces generating relatively high surface runoff velocities over rc
low points.

Five different locations have been identified as having flood risk ar
for the Project Appraisal Report which was completed in spring 2
at schemes involving embankments, Sustainable Drainage Syster



ly Area

ard to the east of Hampstead Heath. There are records of flooding
rea of significant flood risk. Detailed modelling of the flood risk
oved understanding of the Thames Water sewers. Thames Water
ocess by July 2013, after which point modelling can begin. This will
flooding to ascertain more accurately the level of risk.

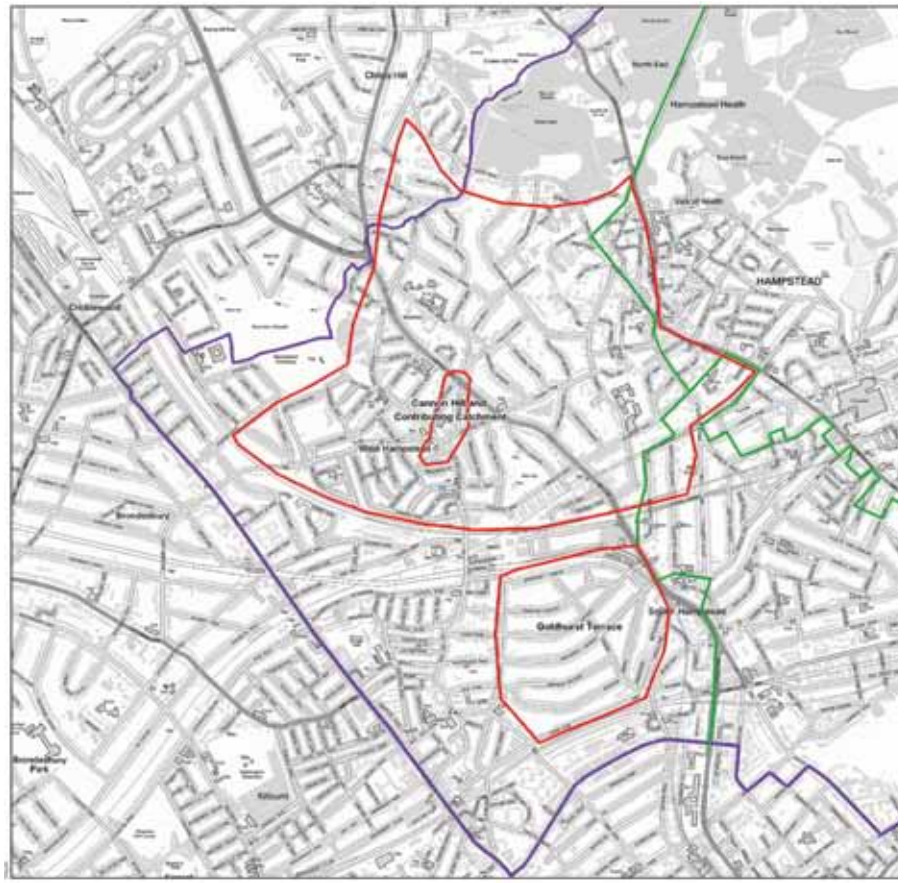
eath Ponds

k in Camden section, the Hampstead Heath Ponds pose
h of the Heath. While the impact of the Hampstead Heath
xtremely severe, this event is unlikely and the City of London
o improve the ponds defences to ensure that the chances of
l further. The City of London Corporation published a review in
on its preferred option from November 2012 to February 2013. It
nning permission in 2014.

have substantially reduced flood risk in the area.

An Initial Assessment was commissioned to look at potential floo
West and assess those which required action. They identified two
Hampstead and West Hampstead.

Figure 6.3 Camden West proposed PARs study area



South Hampstead experienced surface water flooding in 2002 an
records of sewer flooding from 1987 although all but one of them
alleviated by subsequent work.

West Hampstead also experienced surface water flooding in 200
no recorded sewer flooding incidents since 1991.The area aroun
Lymington Road are areas of particular concern where surface wa
occur, and with several of the roads contributing to these locatio

ve the same level of flood risk as the north of the borough,
of properties in Belsize and Kentish Town were affected in the
ea shares a catchment with parts of Islington and the City of
ant links that need to be made with neighbouring boroughs to
ing detrimental effects in Islington and the City of London.

ommissioned to look at potential flood risk locations in the south
those at risk. In the south of the borough only the Primrose Hill
any significant risk. Royal Parks have already implemented
ood risk at Primrose Hill Park and our engineering department
the intersection of Fitzroy Road and Chalcot Road in 2011/2012.
g risk is the inverted siphon under the Grand Union canal along
d by Thames Water, which has previously resulted in flooding.
asset register and updates on its condition and maintenance
m Thames Water.

outh were identified as either being at serious risk of flooding
to flood risk in other areas. The Regent's Canal will be added
er population of the asset register is deemed necessary for
his point although the Council will look to include Sustainable
m any new developments.

gnificant areas of Camden drains into the former Fleet River,
orporated into the Fleet sewer. Overloading of this sewer during
of happening in any one year (1 in 30 year rainfall event) could
ding in Farringdon Street and New Bridge Street in the City
s Street area of Islington. Actions in Camden which minimise
ver network will assist in reducing flood risk in neighbouring
the incorporation of sustainable drainage systems (SuDS) into
the public realm.

ding or the risk of flooding be revealed, the plans for the south of
ed.

- Responding to flood incidents
- Funding and delivering flood mitigation schemes
- Approving new developments

7.1 Recording and maintaining assets

Flood risk assets refer to all structures or physical features that ha
in an area. These include everything from the Hampstead Heath F
DEFRA has provided full guidance on what constitutes a flood risk
Appendix D.

The recording and maintenance of flood risk assets is an importa
management because well maintained assets, such as drainage s
flows are directed away from buildings and important local infrast

Well maintained assets cannot prevent flooding happening but they
probability. For example, Thames Water sewers have been designe
have a 3.3% chance of happening in any one year. When a rainfall
probable than this, such as the 2002 floods, they are likely to overfl

Asset register and record

As the LLFA, the Council is obliged to establish and maintain a **re**
features which are likely to have a significant effect on flood risk ir
available for inspection at all reasonable times. We must also proc
ownership and state of repair of each asset, which is not publicall

The LLFA must determine the criteria for deeming an asset as hav
Camden an asset is deemed to be significant if it is:

- Of such significant size that its failure could cause drainage pr
- Located within an area considered to be at a relatively high pr

The **register** stating the key assets in the borough will be publish
and will be updated annually with new assets and changes in ow
record will be shared with all the organisations which have contri

Maintaining assets

ch which gullies are cleansed is based on best practice
ta which has identified the gullies in known flooding areas
blocked gully would have a serious impact, for instance at
n a report of a blocked gully is made, the team will respond
gate the problem.

ets

ment Agency are the 'designating' authorities of assets. That is,
or structures. If an asset becomes designated, its owner cannot
t consulting the designating authority. The aim of designating
ard them against unchecked works which could increase flood
ible to designate assets owned by a risk management authority
of London Corporation assets (including the Hampstead Heath
though this does not diminish their responsibilities for maintaining

sets will be designed in partnership with neighbouring authorities
stency across the different boroughs. An agreement on this will

lood incidents

- **Damaging or Dangerous flooding** - This is flooding that ent
infrastructure causing damage or is flowing at such rates as to
people.

Preparation for responding to "damaging or dangerous flooding"
planning'. Emergency planning is the general term for the work th
emergency services (i.e. fire and rescue, police and ambulance se
and the Council does in preparing plans and procedures for deali
might affect large numbers of people. It has two main elements: r

Response to a major flooding incident

In order to prepare for a flood event, the council's Emergency Ma
with the local emergency services to produce the Camden Multi-A
Appendix A) which provides a co-ordinated multi-agency respons
to reduce the impact on the public.

The Met Office's national severe weather warning service provides
hazardous weather to the public.

There are two categories:

- Alerts which indicate the risk of severe weather over the next 2
- Warnings which indicate the risk of severe weather during the

These warnings are available on the Met Office website www.met
warnings are for broad areas and there is very little warning time f
neighbourhoods. Due to the uncertainty and very short timeframe
little the Council can do other than to be ready to respond to repo
proactive in areas where flooding is taking place.

In a flooding event, overall responsibility for activating the flood pl
Police or the Council's Emergency Management team. Upon activ
organisations would be notified and they would decide on the lev

In a major rainfall event, the ability of local emergency services to
limited and will focus on preservation of life. In major flood events
who are vulnerable and cannot help themselves through family ar
short term temporary shelter in respite centres.

dealt with 245 calls that evening. It used its 'Batch
hich allows it to prioritise life threatening calls and deal with
Much of the work on the ground consisted of small-scale
mage control and general assistance to householders.
rain had stopped, the crew lifted a manhole cover on the
rhazel Gardens and used a ceiling hook to clear a blockage,
ater fall rapidly. The police were only required to attend to a
passed on over 120 calls to the London Fire Brigade.

sing crew and their vehicle worked through the night to
blocked by the debris deposited by the floods. The housing
ded speedily to a large number of problems in the two most
s, Gospel Oak and Hampstead; repairs officers at Hampstead
sued 75 instructions to contractors in the period 7 - 14
l works to be undertaken.

othly however. Residents could not get through to the council
ssage on an answering machine because the Emergency
was inundated with telephone calls. There was also an
s in granting free bulk rubbish removal. However, once the
problem was appreciated by the Environment Department,
nged, at an approximate cost of £10,000 to the Council.

will require a co-ordinated response through a specifically establis
Group which will determine local strategies in recovery, prioritising
resources appropriately so that the community returns to normali
Council will take the lead role in chairing and managing the recov

7.3 Approving new developments

It is vital for good flood risk management that new developments
and do not increase it elsewhere. Planning policy is led by the Co
planning authority. The Environment Agency and Thames Water a
on very large sites.

Planning policy

Core Strategy Policy CS13 of Camden's development plan, the L
Framework, states that we will require all development to take me
the effects of, and adapt to, climate change and encourage all de
highest feasible environmental standards that are financially viable
occupation by ensuring buildings and spaces are designed to co
effects of, climate change.

We will require major developments or development that increases
surfacing to adequately manage the increases in surface water or s
Development will also be required to take account of known sewer
including appropriate mitigation measures to avoid increased drain
downstream. Where possible, they should look to reduce the flood

In particular, developments in areas which have been identified as
water flooding must be designed to cope with storm events with
in any one year/ 1 in 100 year return period (including an appropr
change). This is in order to limit the flooding of, and damage to, p

Camden Planning Guidance (CPG) has been prepared to support
Development Framework (LDF). This guidance forms a Suppleme
(SPD) which is an additional material consideration in planning de
and lightwells) and CPG 3 (Sustainability) provide further informati
flooding as well as how to minimise the risk of flooding within dev

CPG1 states that Planning Permission will not be granted for
ive square metres that do not incorporate sustainable urban
o the design and no more than 50% of the frontage area should
DS are particularly appropriate in the parts of the borough north
nas predominantly clay soils.

4 (CPG4) explains the Council's policies on basements and
ouncil will only permit basement and underground development

nd natural environment and local amenity;

basements should produce a site specific Basement Impact
nation relating to these issues. These assessments must be
il Engineer with either a Chartered Engineer (CEng) or Chartered
onment Management (CIWEM) qualification. Assessments
ne by a Hydrogeologist with a Chartered Geologist (CGeol)

cy DP27, the Council will not allow habitable rooms and other
ned basement flats and other underground structures in areas at

k Assessment

Council is required to produce a Strategic Flood Risk Assessment
or the Local Development Framework. We produced a joint
orth London boroughs in the North London Waste Partnership.

orth London Waste Partnership to produce another SFRA. Once
Risk Maps have been produced, mapping of the flood risk in
: that point a decision will be taken whether another Strategic

considered. This approvals process will be separate from the Plar
In order to ensure flood risk does not increase, developers will ne
as green roofs, permeable surfaces and storage tanks. If these Su
property then they must be 'adopted' and maintained by the cou
single property, then it is the responsibility of the property owner t

These new powers have not yet been enacted. However, DEFRA
implementation timetable in 2013. Once confirmed, information w
website. We will explore the possibility of working with other neigh
expertise and resources.

We are required to consult the Mayor of London on planning appl
strategic importance. The Mayor is able to overturn our decisions
cannot overrule a SuDS Approval Body decision.

Case study – King's Cross Central

The King's Cross Central development by Argent St. George is the largest area of urban redevelopment in Europe covering 47 acres, 50 new buildings and an area where 45,000 people will live, work and study. With this many people and its proximity to critical infrastructure it is crucial to ensure that flood risk is not increased by the development.

The drainage system has been designed to ensure that there
water ponding in a rainfall event with a 0.03% chance of happ
and, in more extreme events, areas such as roads and car pa

ivery of Project Appraisal Reports for Gospel Oak d Hampstead	April 2013 (Completed)
ublication of Asset Register	May 2013 (Completed)
nounce implementation timetable for SuDS pproval Body	June 2013 (tbc)
ublication of advice to residents on Camden Council ebsite	June 2013
ubmit appropriate local data to be incorporated into od risk and flood hazard maps	June 2013
egin investigation of Royal Free Hospital flood risk	June 2013
omplete modelling of Thames Water sewer system in ghgate and South Camden	July 2013
omplete Project Appraisal Report for West Camden	September 2013
omplete consultation on preferred option of ampstead Ponds	September 2013
etermine whether new Strategic Flood Risk sessment for Camden is required	September 2013
ublish Flood Hazard and Flood Risk Maps	December 2013
ubmission of Detailed Planning Application for ampstead Heath Ponds by City of London	February 2014
inish assessment of Royal Free Hospital flood risk	March 2014
ublish London SuDS Guidance	March 2014
ommence SuDS Approval Body	April 2014 (tbc)

Appendix A: Guide to relevant documents

National documents

1. National Strategy for Flood and Coastal Erosion Management
2. The UK Climate Change Risk Assessment
3. National Planning Policy Framework

Regional documents

4. North London Strategic Flood Risk Assessment
5. Managing risks and increasing resilience: The Mayor's climate
6. London Strategic Flood Framework

Local documents

7. Preliminary Flood Risk Assessment
8. Surface Water Management Plan
9. Local Development Framework
10. Green Action for Change
11. Camden Multi-Agency Flood Plan

Appendix B: Guide to related legislation

1. The Climate Change Act 2008
2. The Civil Contingencies Act 2004
3. The Strategic Environmental Assessment (SEA) Directive 2001
4. The Land Drainage Act 1991
5. The Water Framework Directive 2000
6. Reservoirs Act 1975
7. The Water Industry Act 1991
8. The Highways Act 1980

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ɔf flood risk areas

off Camden North

off Camden South

off Camden West

ɔ risk

ypes to be recorded on register

Management

The National Strategy for Flood and Coastal Erosion Managemen
required by the Flood and Water Management Act 2010. The Env
responsible for delivering it and produced the first strategy in Jun

The overall aim of the strategy is to ensure the risk of flooding an
managed by using the full range of options in a co-ordinated way
to provide a framework so that all sources of flooding as well as c
in a co-ordinated way. It is designed as a resource for all the risk
England as well as other stakeholders.

It sets out a series of high level principles which all risk managem
to apply when making difficult decisions around flood risk manag

- **Community focus and partnership working**- This includes
a bigger say in what action is taken, ensuring that decisions a
appropriate level and guaranteeing that risk is managed in a c
authority boundaries through strong partnership working.
- **A catchment and coastal "cell" based approach**- This en
other areas downstream of the catchment or coast are fully co
- **Sustainability**- Flood risk and coastal erosion management a
communities by managing risks in ways that take account of a
economic and social) and the whole-life costs of any investme
- **Proportionate, risk-based approaches**- Because it is not t
environmentally feasible to prevent flooding and coastal erosic
management approach is required to target resources to thos
greatest effect.
- **Multiple benefits**- FCERM can bring significant economic, e
social benefits such as contribute to regeneration and econom
infrastructure and transport links. It is important that these ber
taken advantage of in any flood risk management schemes ar
inflicted on the natural or historic environment.
- **Beneficiaries should be encouraged to invest in risk ma**
coastal erosion risks are managed the benefits achieved are ir
lead to personal or private gain through the protection of spec

of harm to people and damage to the economy;
through building, maintaining and improving flood and coastal
astructure and systems to reduce the likelihood of harm;

e their own risk through increasing public awareness of the risk
g with people at risk to make their property more resilient and
easures;

on, warning and post-flood recovery working closely with the
ilience Forums.

Change Risk Assessment

k Assessment consists of a Government Report and an Evidence
aid before Parliament on 25 January 2012. The Evidence Report
opportunities for the UK, arising from climate change, over the
ernment Report outlines the UK Government's views on the main
Report.

of the Climate Change Act 2008 which requires:

ge risk assessment (CCRA) that must take place every five years;

programme (NAP) which must be put in place and reviewed
ut the Government's objectives, proposals and policies for
entified in the CCRA;

owers (not applicable in Northern Ireland) which enable the Secretary
authorities" to prepare climate change adaptation reports.

sessment looks at over 100 risks from a number of disparate
here decisions need to be made in the near future (i.e. the next
impact on five sectors: Agriculture and Forestry, Business, Health
Infrastructure and the Natural Environment. It does not consider
baseline more reliable.

relate to flooding are:

pacts on high quality agricultural land due to flooding and
astal erosion.

out for UK businesses due to an increase in supply chain
xtreme events

- Scouring of road and rail bridges.
- Damage to property due to flooding and coastal erosion.
- Flooding and coastal erosion impacting on key coastal habitat
  services (including the extent of beaches and nature sites for t

3. National Planning Policy Framework

The National Planning Policy Framework is a new document publ
for Communities and Local Government in March 2012. It consol
Statements into one document with additional technical guidance

The key section on flooding states that inappropriate developmer
should be avoided by directing development away from areas at l
development is necessary, they should be designed to make the
risk without increasing flood risk elsewhere

It states that local plans should be supported by Strategic Flood l
a sequential, risk-based approach to the location of development
possible, development in areas of potential flood risk to people ar
necessary, to manage any residual risk, taking account of the imp
should be done through the Sequential Test, which is explained ir
guidance.

Although the NPPF focuses mainly on the risk from river and coas
new iterations of the Strategic Flood Risk Assessment to include
well and for this to be considered in future site allocations.

Regional documents

4. North London Strategic Flood Risk Asses

The North London Strategic Flood Risk Assessment was produce
Waste Partnership in 2008 which consists of the London Borough
Enfield, Hackney, Haringey, Islington and Waltham Forest.

The Primary aims of the SFRA were:

- Identify the areas within North London that are at risk of floodi
  identified in table D1 in PPS25 , and within Flood Zone 3, the

sequential test approach to site allocation within the indicative

or assessing the merits of potential development allocations
od risk assessment, taking into account the flood risk
uses (table D2, PPS25)

ns for dealing with the range of flood risks and provide guidance

monitoring and review methods

on from the Environment Agency, the North London Boroughs,
l Thames Water but was produced before the Drain London
not have the most up to date flood maps and should be used in
Water Management Plan and the maps in Appendix D.

nd increasing resilience: The Mayor's aptation strategy

ned a Climate Change Adaptation Strategy in October 2011. It
also at drought and overheating. The aim of the Strategy is to
climate change on London and to prepare for the impacts of
weather to protect and enhance the quality of life of Londoners.
mes law, a new London Environment Strategy will replace this
with the other statutory strategies and plans concerning the
is required to publish under the GLA Act (1999).

ctions detailed in Figure A.1 to be taken by London Boroughs
ondon with regards to flood risk.

	Lead	Partners	Dates
predict and manage flood risk			
th the Environment Agency, s to improve the mapping of k from all sources of flooding flood risk for all flood sources.	GLA	EA, LRP, TfL, MPS, Boroughs	On-going
m will develop a surface London which identifies and	Drain London	Boroughs	Winter 2011

reporting system and encourage its adoption across London.	Lor
To enable coherent cost-effective working	
3.5. The Mayor will maintain the Drain London Forum as a mechanism to facilitate information exchange, project identification and development.	GL/
3.6. The Mayor will encourage each borough to form a cross-departmental flood group	GL/
3.7. The Mayor will work with Thames Water, the Environment Agency and the boroughs to trial an intensive urban greening retrofitting pilot project to manage surface water flood risk.	GL/
To prioritise flood risk management actions we need to identify th communities and critical assets	
3.8. The Mayor will work with the London Resilience Partnership and the London Climate Change Partnership to identify and prioritise critical infrastructure and vulnerable communities at flood risk.	GL/
3.9. To reduce the risk of local surface water flooding, the Mayor will work with TfL, the London boroughs and Thames Water to review their drain and gully maintenance programme, particularly in high-risk areas.	GL/
To raise individual and community-level awareness and ca recover	
3.10. The Mayor will work with the Environment Agency to increase the number of Londoners signing up to the Floodline Warning Direct scheme and to raise awareness of the measures that individuals and communities can undertake to reduce the risks and manage the consequences of flooding.	EA
3.11. The Drain London Forum will identify two communities at significant flood risk and work with them to develop bespoke community flood plans to build their capacity to manage flood risk. The Mayor will then encourage the boroughs and	Dra Lor

s within London. The framework also covers the “pre-flooding” or
meaning that it can be activated prior to any impacts occurring
activated in preparation even if impacts do not occur. The reason
mework in place is due to the complex nature of flooding and
, requiring a comprehensive and often sustained response from a

n to London responders, before, during and after a significant
on

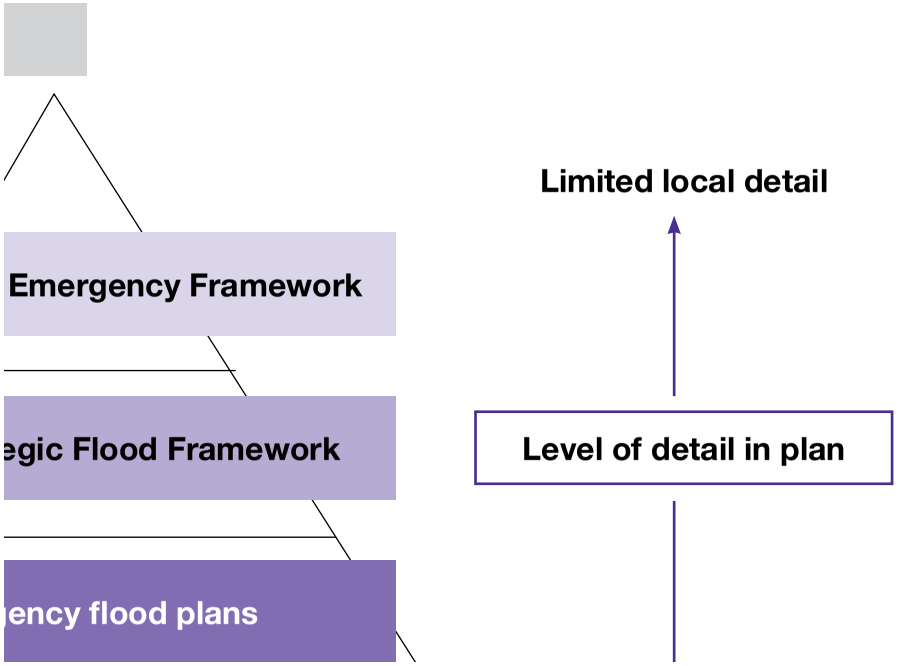
ks to existing plans and procedures

hanisms for invoking a London-wide response

guidance about warning the public before, during and after a

onders should take at each stage of a flooding incident

he London Strategic Flood Framework sits between the Multi-
National Flood Framework



British Transport Police	Health Protection Agency
London Ambulance Service	London’s Business Community
London Fire Brigade	London Councils
Association of Train Operating Companies	London Coroners
City of London Corporation	London District Military
Met Office	London’s Faith Communities

Local documents

7. Preliminary Flood Risk Assessment

The preliminary flood risk assessment is a statutory document rec
Regulations 2009. This legislation requires that Lead Local Flood
preliminary assessment report in relation to flooding from surface
ordinary watercourses in its area.

The PFRA is a high level screening exercise based on already ava
historic flooding and modelling for potential future flooding.

The PFRA was delivered as part of the wider Drain London projec
the delivery of Surface Water Management Plans (SWMP) and Pre
Assessments (PFRA) for each of the thirty three London Boroughs
Group 3 which consisted of Hammersmith & Fulham, Kensington
Camden, Islington and the City of London. A specific consultant v
PFRAs and SWMPs for all of these boroughs as they were recogr
catchment.

The PFRA was delivered to the Environment Agency for approval
in December 2011 on their website here http://www.environment
planning/135542.aspx.

The study used Environment Agency maps which identified Great
Surface Water Flood Risk Areas within England. It was by far the l
identified as being potentially at surface water flood risk in an extr
0.5% chance of happening in any one year. This includes approxi

nanagement strategy for a particular area. Lead Local Flood
oduce them in order to better understand their surface water
l flood risk management strategies.

Management Plan was completed in July 2011 as part of the
urface Water Management Plan will be published on the website
the strategy in summer 2013.

g objectives:

rstanding of surface water flood risk in and around the
den, taking into account the challenges of climate change,
hic change and increasing urbanisation in London;

ritise Critical Drainage Areas, including further definition
zones and mapping new areas of potential flood risk (see
;

ifunctional recommendations for surface water
rove emergency and land use planning, and enable better flood
ucture investments;

ate partnerships between key drainage stakeholders to
ulture of data, skills, resource and knowledge sharing, and closer
ss boundary working opportunities;

t with stakeholders to raise awareness of surface water
ks and assets, and agree mitigation measures and actions;

ble a real change on the ground rather than just reports and
s and stakeholders take ownership of their flood risk and commit
nce of the recommended measures and actions;

grouped as follows:

ships actions to communicate risk internally or externally to LLFA
sk related partnerships

ment Act (FWMA)/Flood Risk Regulations (FRR) duties and
e FRR and FWMA – Refer to Appendix A of the LGA 'Preliminary
development of the Local Strategy for Flood Risk Management'
num requirements.

The Local Development Framework (LDF) is a collection of planni
conjunction with national planning policy and the Mayor's London
strategy for managing growth and development in the borough, ir
jobs and infrastructure will be located.

It consists of a core strategy, development policies, a Site Allocati
Plans, a Proposals Map and the North London Joint Waste Plan (
London Strategic Flood Risk Assessment).

The Core Strategy Policy CS13 focuses on 'tackling climate chan
higher environmental standards'. This includes ensuring buildings
cope with, and minimise the effects of, climate change.

It also states that Camden will minimise the potential for surface v
development to avoid harm to drainage systems and prevent or r
and down-stream flooding, especially in areas up-hill from, and in
from surface water flooding.

The development policy **DP22 – Promoting sustainable desig**
states that the council will require development to be resilient to c
schemes include appropriate climate change adaptation measure
off and including pervious surfaces to enable water to infiltrate the
shrinking and flooding.

In addition **DP23 – Water** requires developments to reduce their
pressure on the combined sewer network and the risk of flooding
and rate of run-off and waste water entering the combined storm
through capturing, retaining and re-using surface water and grey
as other methods. It will also ensure that developments are asses
downstream groundwater flood risks in areas where historic unde
to have been present.

Finally **DP27 – Basements and lightwells** states that in determi
basement and other underground development, the Council will r
scheme's impact on drainage, flooding, groundwater conditions a
appropriate. The Council will only permit basement and other unc
does not cause harm to the built and natural environment and loc
result in flooding or ground instability. The Council will not permit
include habitable rooms and other sensitive uses in areas prone t

limate

nproving green spaces and involvement in gardening and food

ging climate

ntifies “less risk of flooding” explicitly as one of its key outcomes. can also help achieve other outcomes:

plains the risk to residents and their personal responsibilities and hat more residents, organisations and communities are informed n helping us adapt to a changing climate. For instance, the use erials which allow water to soak into the ground rather than

as areas where flood water can run to in extreme rainfall events case and the available funding for better ‘cool’ zones such as the public realm.

vesting can reduce the demand of households and businesses e decrease the impact of water shortages.

Approval Body will ensure more buildings are designed and e changing climate.

sity, improving green spaces and lening and food growing.

good opportunities for helping environmental policies. They can ckle urban heat islands (the phenomenon whereby inner cities rounding countryside) and provide opportunities for communities ning and food growing.

tant for flood management. In extreme rainfall events, there er for the drainage system to cope with and areas where the need to be identified. Open green spaces are a very effective rface water and by creating wetlands can potentially improve of those green spaces. An additional benefit of designing iversity is that local residential groups may be happy to take on

or events require it.

The following organisations were consulted in the development of

London Borough of Camden	London Ambulance Service
London Fire Brigade	Camden Police
Environment Agency	Thames Water
Royal Free Hospital	University College London Hospital

The Camden Multi-Agency Flood Plan has the following objectives

- Provide a framework for response activities.
- Manage the wider impact of borough flooding events to reduc communities, utilities and environment.
- Manage precautionary actions to preserve life for the highest ir
- To prioritise the identification and required responses to protec community.
- To support the Environment Agency in the provision of warning risk although that has no direct application within the geograph
- Provide accurate and timely information to public and local bu
- Prepare key parts of the community susceptible to flooding thr and information.
- Provide a framework for recovery activity to support the recov business.

ıct 2004

ıtal Assessment (SEA) Directive 2001

991

rective 2000

991

ns 2009

nge Act (2008)

Climate Change Risk Assessment every five years, the first of
? (see Appendix A). This is to be accompanied by a National
ckle the risks identified in the climate change risk assessment.
o be reviewed every five years. The Act has given the
ire public bodies and statutory organisations such as water
they are adapting to climate change.

encies Act (2004)

gle framework for civil protection in the UK and sets out the
in the event of a flood. The CCA is separated into two substantive
civil protection (Part 1) and emergency powers (Part 2).

s the legislative basis for the Multi-Agency Flood Plan and the
nework

vironmental Assessment (SEA) Directive

ase the consideration of environmental issues during decision
ocuments such as plans, programmes or strategies. The
environmental effects that are likely to result due to the
ogramme or strategy.

Regent's Canal is fully owned by the Canal & River Trust and is nc

5. The Water Framework Directive (2000)

This is the most substantial piece of European Commission wate
designed to improve and integrate the way water bodies are mar
It came into force on 22 December 2000 and was transposed int
States must aim to reach good chemical and ecological status in
by 2015.

The Water Framework Directive establishes new and better ways
rivers, lakes, groundwater, transitional (where freshwater and sea
waters. It is designed to:

- prevent deterioration in the classification status of aquatic eco
  improve the ecological condition of waters;
- achieve at least good status for all waters. Where this is not p
  be achieved by 2021 or 2027;
- promote sustainable use of water as a natural resource;
- conserve habitats and species that depend directly on water;
- progressively reduce or phase out release of individual pollutar
  that present a significant threat to the aquatic environment;
- progressively reduce the pollution of groundwater and prevent
  pollutants; and
- contribute to mitigating the effects of floods and droughts.

To deliver this, the Environment Agency has embarked on river ba
planning with the aim to develop new and better ways of protecti
water environment. It is important that measures to manage local
deterioration of water bodies and should consider opportunities t
conjunction with local flood risk management.

6. Reservoirs Act (1975)

This act focuses on the management of reservoirs and provides t

a reservoir is a "raised reservoir" if it is designed to hold, or ca

ty Act 1991

Water Supply and Water and Sewerage Companies. The relevant gement is Part IV which deals with sewerage services. It also and duties of water companies including concerning water arge for services.

ded by The Water Industry Act 1999 and the Water Act 2003.

t 1980

arge range of activities and responsibilities that Highways the two highways authorities are Transport for London for the uncil for all other roads.

t the highway authority may construct drains and take actions hem for the purpose of draining the highways. Highways have hat the highways drain fully and can take actions to clean out ch prevent this happening.

egulations (2009)

came into force in December 2009 and transposed the EU England and Wales. The Flood Risk Regulations require three

Assessment (PFRA) – This involves collecting information from surface water, groundwater and small watercourses, n into a PFRA report (the report for the London Borough of the Environment Agency website (www.environment-agency. dicative Flood Risk Areas. There is an Indicative Flood Risk Area f Greater London.

d Risk Maps – Following the identification of Flood Risk Areas, and Lead Local Flood Authorities are required to produce hazard ve Flood Risk Areas by 22nd December 2013.

nt Plans – The final stage is for the Council to produce a Flood r the Indicative Flood Risk Areas by 22nd December 2015. This l Strategy and the Surface Water Management Plan

be repeated on a six yearly cycle with a new PFRA expected in

- Lead Local Flood Authorities
- The Environment Agency
- Water Companies
- Highways Authorities
- Internal Drainage Boards (not applicable in Camden)
- District and Borough Councils (not applicable in Camden).

In Camden, the four organisations who are risk management auth Borough of Camden, Thames Water, the Environment Agency an

All risk management authorities have the following duties and pov

1. Duty to be subject to scrutiny from lead local flood authorities' They can be called to account for their actions by the Culture Committee.
2. Duty to co-operate with other risk management authorities in and coastal erosion risk management functions, including sha data.
3. Power to take on flood risk functions from another risk manag agreed by both sides

1. London Borough of Camden

The Flood and Water Management Act 2010 identified Camden a Authority for its administrative area. This gives Camden a strategi management of surface water runoff and groundwater flood risk a powers:

- Power to do works to manage flood risk from surface runoff o
- Power to designate structures and features that affect floodin
- Powers to request information from any person in connection and coastal erosion risk management functions;

It also gives the Lead Local Flood Authority new responsibilities w

s

pproval Body

ome of Camden's longstanding responsibilities have important
nagement. These include:

ning authority

ways authority

gency planning

and open spaces

housing

for both the supply and drainage of water in the borough. It has
around flood risk management:

erate systems of public sewers and works for the purpose of
a, including maintenance of all drains which serve more than one
beyond the property boundary.

lents involving their assets.

vements to alleviate sewer flooding problems with priority being
ernal flooding problems

ns and sewers that are to connect to a public sewer from 1 April

e SuDS (Sustainable Drainage System) Approval Body when the
sed to communicate with the public sewer.

cording to the standards of the reservoir act.

t have:

drainage or land drainage until it reaches the sewer network;

within the property boundary and serving one property

- Providing the data, information and tools to inform governmer
management authorities in delivering their responsibilities.
- Reporting and monitoring flood and coastal erosion risk mana

The Environment Agency also has a large operational role which r
from main rivers and the sea, which do not affect Camden . How
operational roles do affect Camden:

- Statutory consultee for all planning applications (other than mi
where there is a risk of flooding and for any site greater than 1
will provide advice on Flood Risk and help the local planning a
interpret developer's flood risk assessments that have been su
evidence base in support of a planning application.
- Enforcement authority for reservoirs that are greater than 10,0
flood plans although reservoir owners are responsible for carry
reservoir safety. The Environment Agency is also responsible f
maintaining a register of reservoirs, and making this informatic

4. Transport for London

Transport for London (TfL) is the local government body responsibl
the transport system in Greater London. It is responsible for the Lo
its gullies and culverts and for ensuring that these assets do not ca
undertaking a climate risk assessment of its assets and operations
action plans for key climate risks. As a highways authority it is iden
Management Act as a risk management authority with all the respo

Other key stakeholders

5. Residents and businesses

It is the responsibility of residents and businesses to look after the
including protecting them from flooding. While in some circumsta
property owners may be liable due to neglect of their own respon
occasions when flooding occurs despite all parties meeting their r

For this reason there are some easy steps that all those with grou

ooding. The Environment Agency has designed one which can
t Agency website www.environment-agency.gov.uk.

ater risk of flooding in a major rainfall event than others. It is
id your level of risk. Those who are based in areas of greater flood
r protection measures for their home to stop flood water coming in
o it causing lasting damage. More information can be found in the
ction.

er capital schemes to alleviate flood risk in areas identified as
ensure that the affected communities are engaged early with the
ss it and share their concerns, interests and priorities and will rely
interest in order to make this process a success.

don Authority

y (GLA) is the strategic regional authority with powers over
c development and fire and emergency planning. Transport for
of the GLA.

ood authority and has no statutory role in flood risk
veloped the Drain London project to improve knowledge of
d Camden produce a Surface Water Management Plan and
sment as required by the Flood Risk Regulations.

vided up boroughs into groups, loosely based on catchments.
ammersmith & Fulham, Islington, Westminster, Kensington &
don. This group continues to meet to discuss joint work.

orporation

on is the local government for the City or 'Square mile' and as
uthority with responsibilities for flood risk management in its area. It
stead Heath and is responsible for management of the Hampstead
re impacted by the Reservoirs Act. Under the new legislation all of
eservoirs and hence require flood plans. If the ponds are in a chain
onds be a reservoir, a plan is needed for the entire chain. More
tial risk can be found in the flood risk section.

Trust to ensure that no flooding occurs from the canals network.

9. Network Rail

Network Rail is responsible for three mainline stations in Camden
King's Cross. All other stations are managed by either Transport f
railway company. However Network Rail does manage the entire
services and the London Overground including cuttings, culverts
be crucial for flood risk. They are not risk management authorities
ensuring that their assets are maintained and do not increase floc

10. Neighbouring London boroughs

All London boroughs are Lead Local Flood Authorities for their are
responsibilities as Camden. However water, of course, flows acro
boundaries and so it is crucial to work closely with neighbouring b
where issues in Camden are caused by the situation in other borc

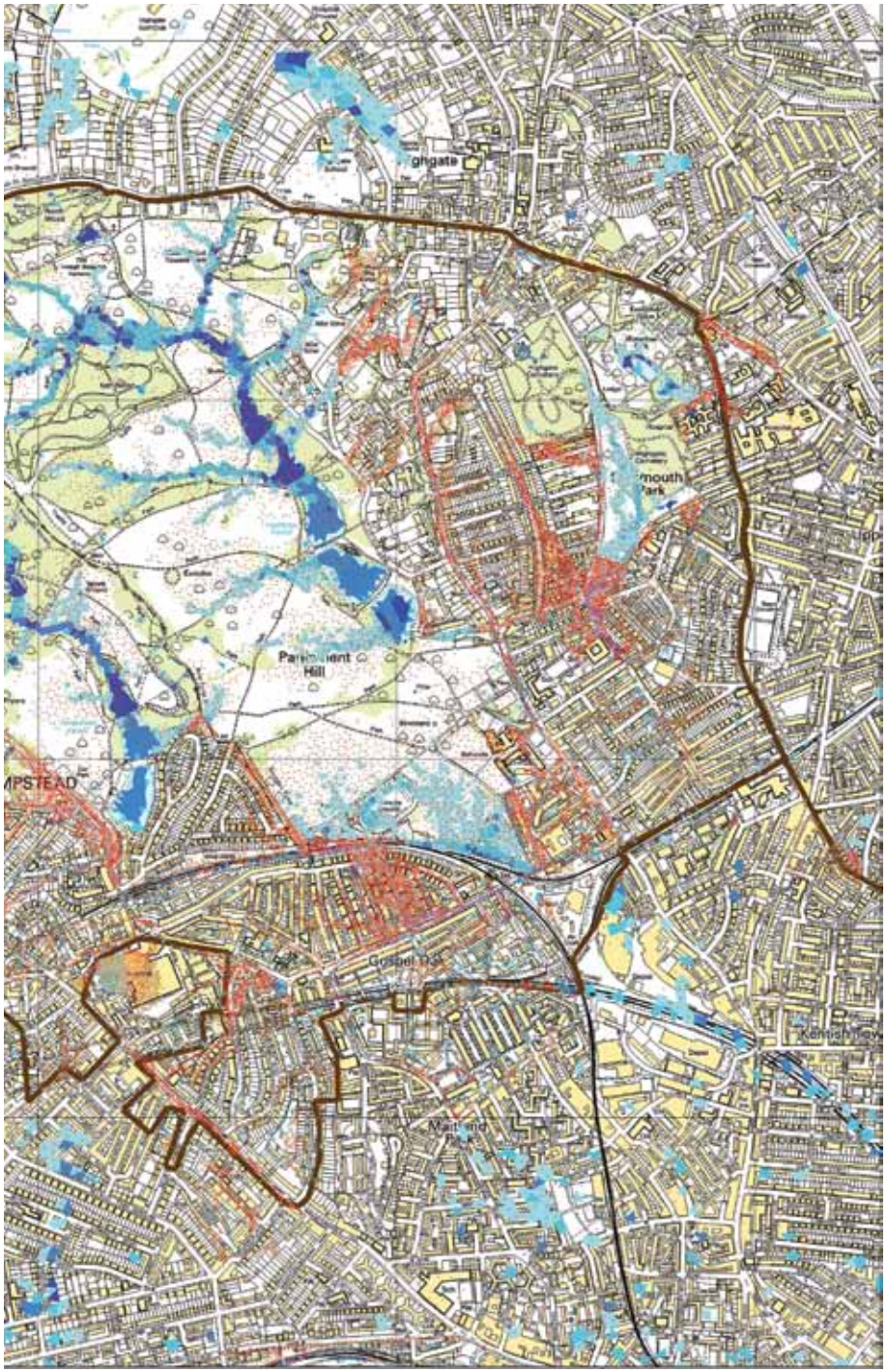
As well as the boroughs directly surrounding Camden (Islington, Wes
the City of London), Camden will also be working with Hammersmith
& Chelsea because although they are not neighbours, they are part c
means water can potentially run from Camden through Westminster
and so it is possible we may be able to contribute to solutions to the

Summary of responsibilities

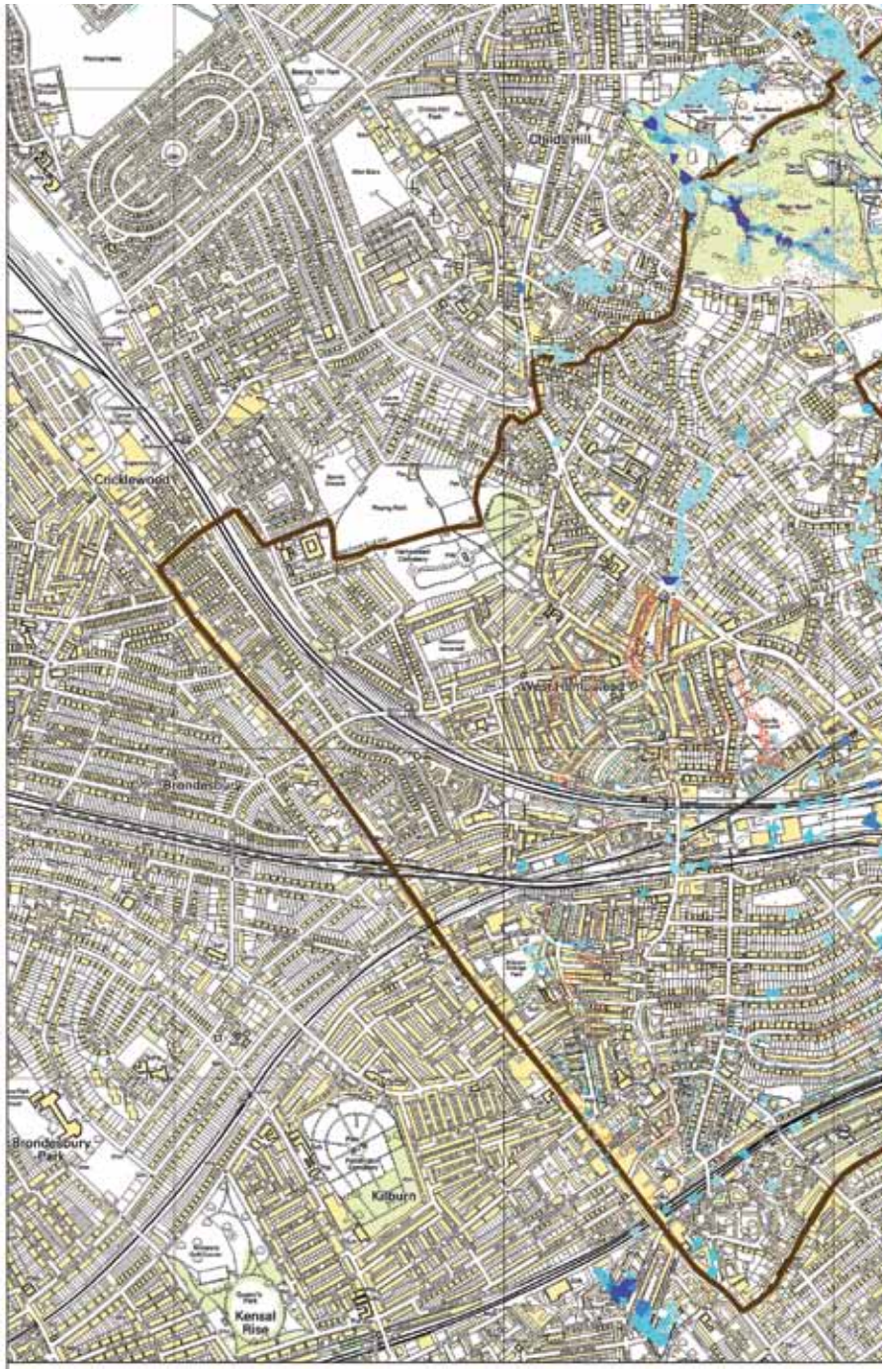
Responsibility	Stakeholder	Action
Actions to increase understanding of flood risk	Camden Council	Produce Flo Investigatio
Actions to increase understanding of flood risk	Camden Council / Environment Agency	Publish Floo Managemer
Actions to fund and deliver flood defence schemes	Camden Council	Put forward for inclusion RFCC mediu
Actions to fund and deliver flood defence schemes	Camden Council	Engagemen residents on defence sch
Actions to fund and deliver flood	Thames	Contribute t

	All asset owners	Inspection, maintenance and repair of own assets	On-going
	Camden Council	Maintenance of the Asset Register and Record	On-going
	Camden Council	Publish the Asset Register	May 2013
	Camden Council	Refresh the Asset Register	Every March
	Thames Water and Camden Council	Determine ownership of a disputed pipe	On request
to	All stakeholders	Reporting a flood incident	When required
to	Metropolitan Police, the London Fire Brigade, the London Ambulance Service, Camden Council NHS North Central London, Environment Agency, Thames Water and British Waterways	Attendance at all Silver and Gold meetings	When required
to	Camden Police	Chair of any Silver or Gold meetings	When required
to	Camden Council	Produce a new Multi-Agency Flood Plan	Every 2 years or when there is a significant change. Last updated Summer 2012
to	Camden Council and Camden Police	Activation of Multi-Agency Flood Plan	When required
to	Camden Council	Co-ordination of a Recovery Co-ordinating Group	When required
to	Camden Council	Provision of respite centres	If required/ The capability to do this

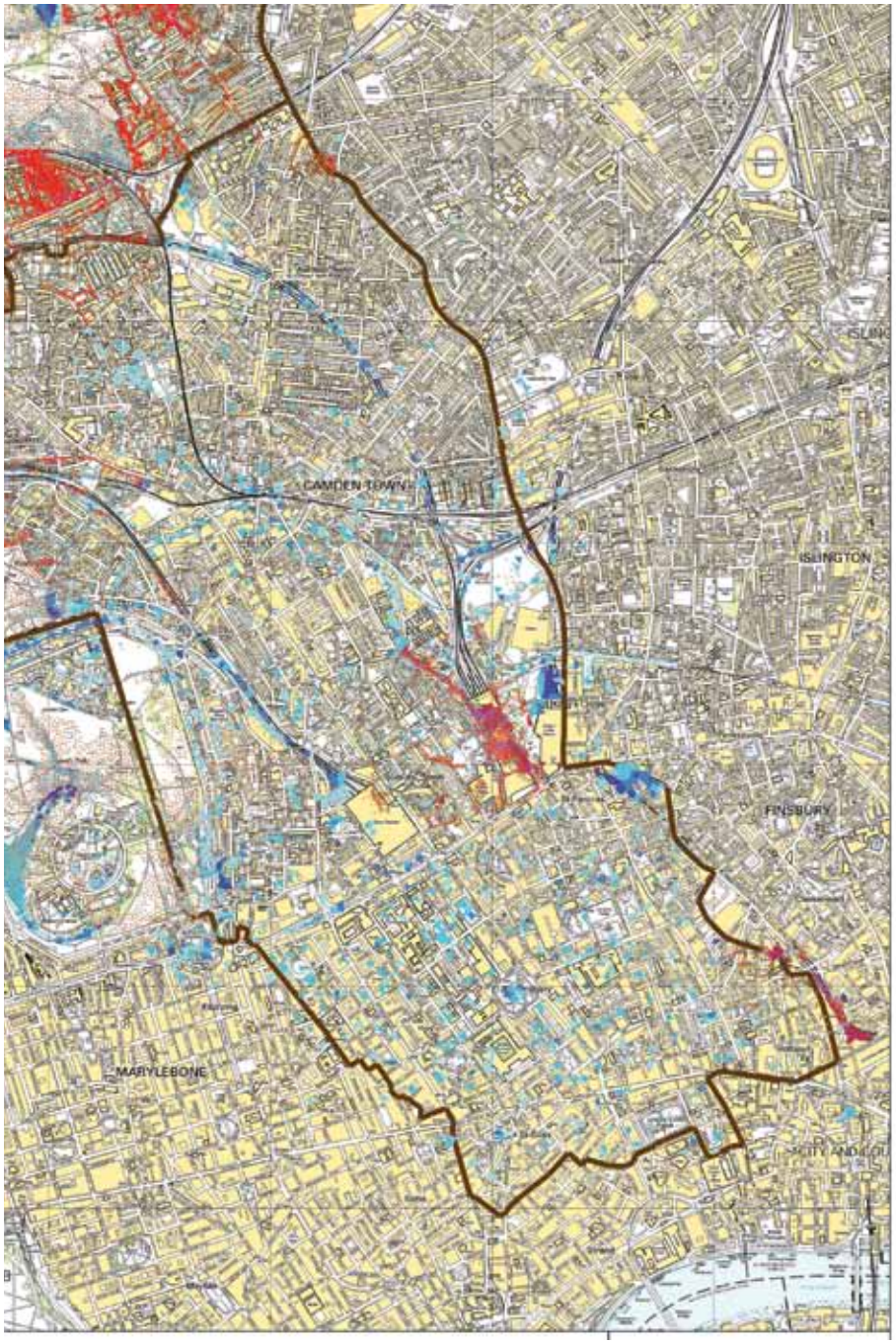
		managemer
Actions to ensure new developments meet flood risk requirements	Prospective planning applicants	Use the floo managemer and strategi risk assessm refreshed) to Risk Assess
Actions to ensure new developments meet flood risk requirements	SuDS Approval Body	Ensure that large scale d projects hav drainage ap
Actions to ensure new developments meet flood risk requirements	SuDS Approval Body	Ensure that construction drainage imp have sustain approval



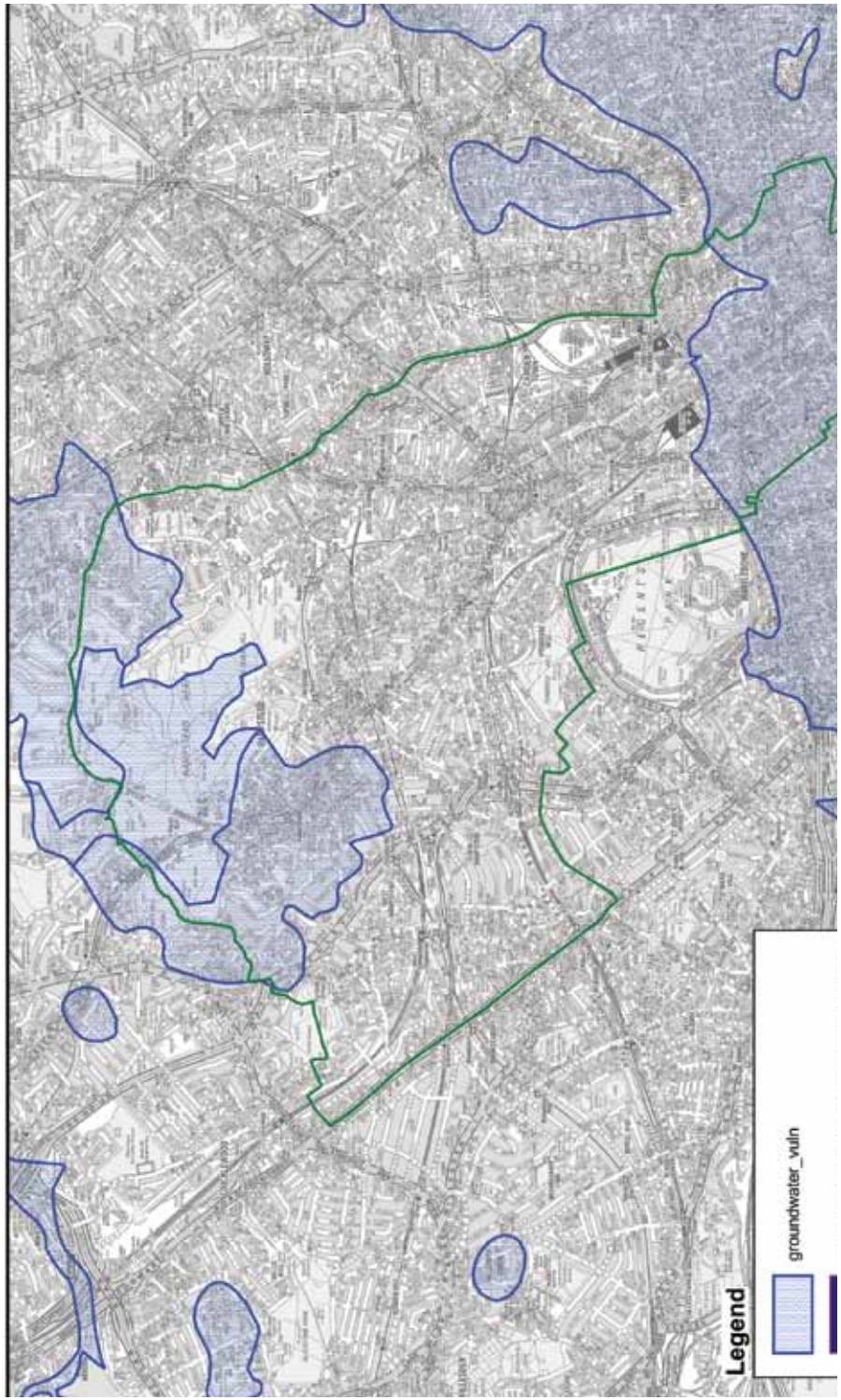
water is travelling) >= 0.05m/s >= 0.05m/s



These are initial maps showing potential flows and areas of pondi
1.33% chance of occurring in any one year (a 1 in 75 year return
map and may be superseded by more area specific maps. It is no



ng potential flows and areas of ponding for a flood event with a
n any one year (a 1 in 75 year return period). It is an indicative



Appendix E - Asset types to be recorded on register

Category	Links	Nodes	Polygons
Type of structures or features	Open channel	Manhole	Reservoir, including lakes and ponds
	Culvert	Inlet	Flood storage pond
	Sewer	Outlet	Swale
	Drain, including highway drain	Pumping stations	Soakaway/filter strip
	Rising main	Gully	Permeable paved area
	Flood defence bank	Inspection chamber	
	Flood defence wall	Junction	
	Permeable pavement	Change of physical character or direction	

Contact
Sustainability team
Environment and transport
Culture and environment
London Borough of Camden
Tel: 020 7974 4444
Email: greencamden@camden.gov.uk
Web: camden.gov.uk/greencamden

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Camden