



BOW TIE

CONSTRUCTION

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10 Downside Crescent

Basement Impact Assessment

Introduction 0.0

This document has been prepared in conjunction with and application to construct a new rear extension with new basement below it at no 10 Downside Crescent.

As such and in compliance with DP27 this basement impact assessment has been prepared following the guidance set out by CPG4. Typically a BIA might include the following steps:

Stage 1 Screening

Stage 2 Scoping

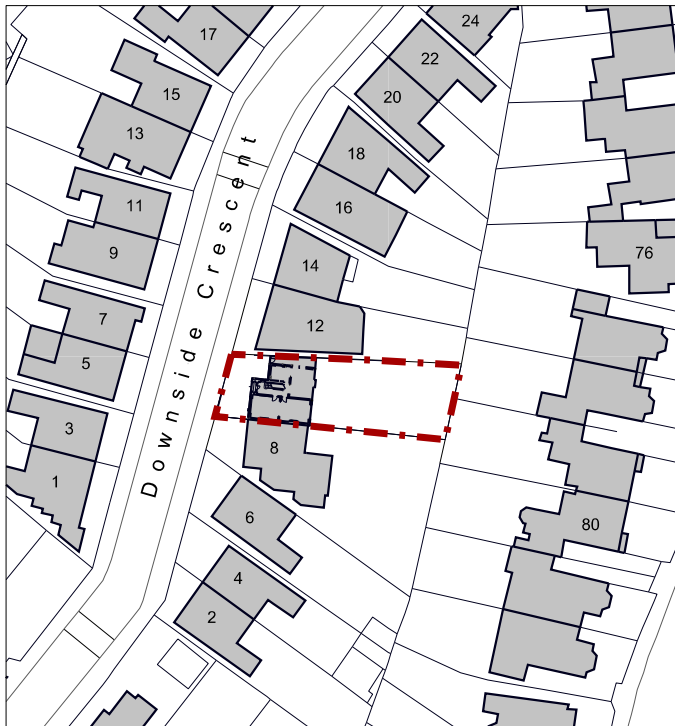
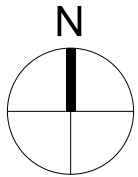
Stage 3 Site investigation and study

Stage 4 Impact assessment

Stage 5 Review and decision making

The screening stage has demonstrated that there are no special risks associated apart from those commonly associated with such basement work.

Screening 1.0



Location plan 1:1250@A3

0m 10m 50m 100m

A horizontal scale bar with markings at 0m, 10m, 50m, and 100m.

Site:

The existing house is a 3 storey semi detached property built during the early part of the twentieth century. The construction is solid wall with timber floors generally.

The immediate context of the house and its neighbours is relatively level terrain though the wider Hampstead and Belsize Park area.

A number of other properties within Downside Crescent have constructed basements:

no 8 Partial basement below rear extension granted 2007/5005

no 23 Basement under existing house and new rear extension 2014/7587/P

The site is located north of the Northern line and south of the underground rail lines.

A number of maps are referred to in the screening appraisal and these can all be found in appendix A.

Screening 1.1

Figure 1. Ground water flow.

No	Question	Comment	Response (Yes or No)
1 a	Is the site located above an aquifer?	The site is not within the secondary A aquifer, refer to figure 8, appended.	NO
1 b	Will the proposed basement extend beneath the water table surface.	Perched water may be present above the London Clay formation level, which may require dewatering during construction.	NO
2	Is the site within 100m of a watercourse, well (used or disused) or potential springs line?	Refer to figure 11.	NO
3	Is the site within the catchment of the pond chains on Hamstead Heath.	Refer to figures 14 & 15.	NO
4	Will the proposed basement development result in a change in the proportion of hard surfaced/paved areas?	No more than if the proposed extension above is built without the basement. Besides the footprint of the development will occupy less than 1/6 of the rear garden area. The front garden which is currently paved will be resurfaced with permeable bound gravel.	NO
5	As part of the site drainage, will more surface water than at present be discharged to the ground?	No the drainage design will ensure that a similar amount of surface water will be discharged to the ground.	NO
6	Is the lowest point of the proposed excavation (allowing for any drainage and foundation space under the basement floor) close to, or lower than the mean water level in any local pond (not just pond chains on Hamstead Heath) or spring line?		NO

The flow chart completed alongside does not raise any specific concerns regarding the effect of the proposal on ground water.

Screening 1.2

Slope stability screening flowchart

No	Question	Comment	Response (Yes or No)
1	Does the existing site include slopes, natural or man made, greater than 7° (approximatley 1 in 8)	The site and its neighbours is clearly on ground without a signifiacnt slope.	NO
2	Will the proposed reprofiling of the landscape at the site change slopes at the property boundary to more than 7° (approximatley 1 in 8)	The levels of the site and the site boundary shall remain the same.	NO
3	Does the development neighbouring land, including railway cuttings and the like, have a slope greater than 7° (approximatley 1 in 8)		NO
4	Is the site within a wider hillside setting or where the general slope is greater than 7° (approximatley 1 in 8)	The general Belsize Hill and Hampstead area is sloped. The land in Downside Crescent at this point in not sloped.	NO
5	Is London Clay the shallowest strata on the site	Borehole data collected at no 23 (see appendix B) indiated that below 1m depth soft London Clay with stiffer material below.	YES
6	Will any trees be felled as part of the proposed development and/or are any works proposed within any tree protection zones where trees are to be retained	Refer to arboricultural report.	NO
7	Is there a history of seasonal shrink or well subsidence in the local area and/or evidence of such effects at the site	No cracking evident in existing building at no 10, but London Clay has a high shrinkage potential. New foundations for the proposed basemnt should be in accordance with NHBC standards part 4 – foundations. The depth of these foundations will be eblow the influence of any trees.	NO
8	Is the site within 100m of a watercourse or a potential spring line?	Refer to fig 11, which clearly shows there are no water courses in the vicinity.	NO

The slope stability chart is set out alongside and below.
The answers to questions 5 and 13 are YES.

The proposed foundations will be deeper than those of the neighbours and that the ground is made up London Clay. Both are common challenges that can be met with an adequately considered structural design.

9	Is the site within an area of previously worked ground?	Refer to figure 4. The land on which the house stands was part of the gardens to Haverstock Lodge. Refer to figure 19.	NO
10	Is the site on an aquifer ? If so will the proposed basement extend beneath the water table such that dewatering may be required duing construction?	Refer to figure 8.	NO
11	Is the site within 50m of Hampstead Heath ponds ?	Refer to fig 11 and other maps.	NO
12	Is the site within 5m of a highway or pedestrian right of way ?	Refer to drawings.	NO
13	Will the proposed basement significantly increase the differential depth of foundations relative to neighbouring properties	The basement foundations will be deeper than the neighbouring property foundation depths, however a full design will ensure that tempoary and longer term stability of adjacdent structures is mainatined at all times.	YES
14	Is the site over (or within the exclusion zone of) any tunnels, eg railway lines	The Northern line runs to the south of the site and the Thameslink tunnels run to the north. Both are of significant distance not to be of concern. Refer to 18.	NO

Screening 1.3

Figure 3. Surface flooding flowchart

No	Question	Comment	Response (Yes or No)
1	Is the site within the catchment of the pond chains on Hampstead Heath.	No refer to figures 14 and 15 indicating the site location and the catchment area.	NO
2	As part of the site drainage, will surface flows (e.g. rainfall and run-off) be materially changed from the existing one?	Not significantly. The additional flow from the extension roof will be attenuated. The front driveway will be recovered with a permeable material.	NO
3	Will the proposed basement development result in a change in the proportion of hard surface/paved areas.	As the basement is almost entirely below the new extension, it will not in itself have any significant impact on rain water discharge.	NO
4	Will the proposed basement development result in changes to the profile of the inflows (instantaneous and long-term) of surface water being received by adjacent properties or downstream water courses?		NO
5	Will the proposed basement development result in a change to the quality of surface water being received by adjacent properties or downstream water courses.	No change in water quality is expected.	NO

The screening flow chart relating to surface flooding does not raise any problems for further investigation.

Scoping 2.0

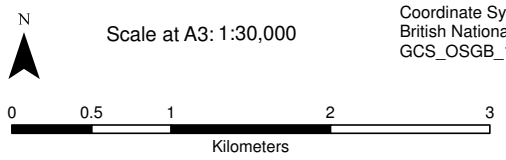
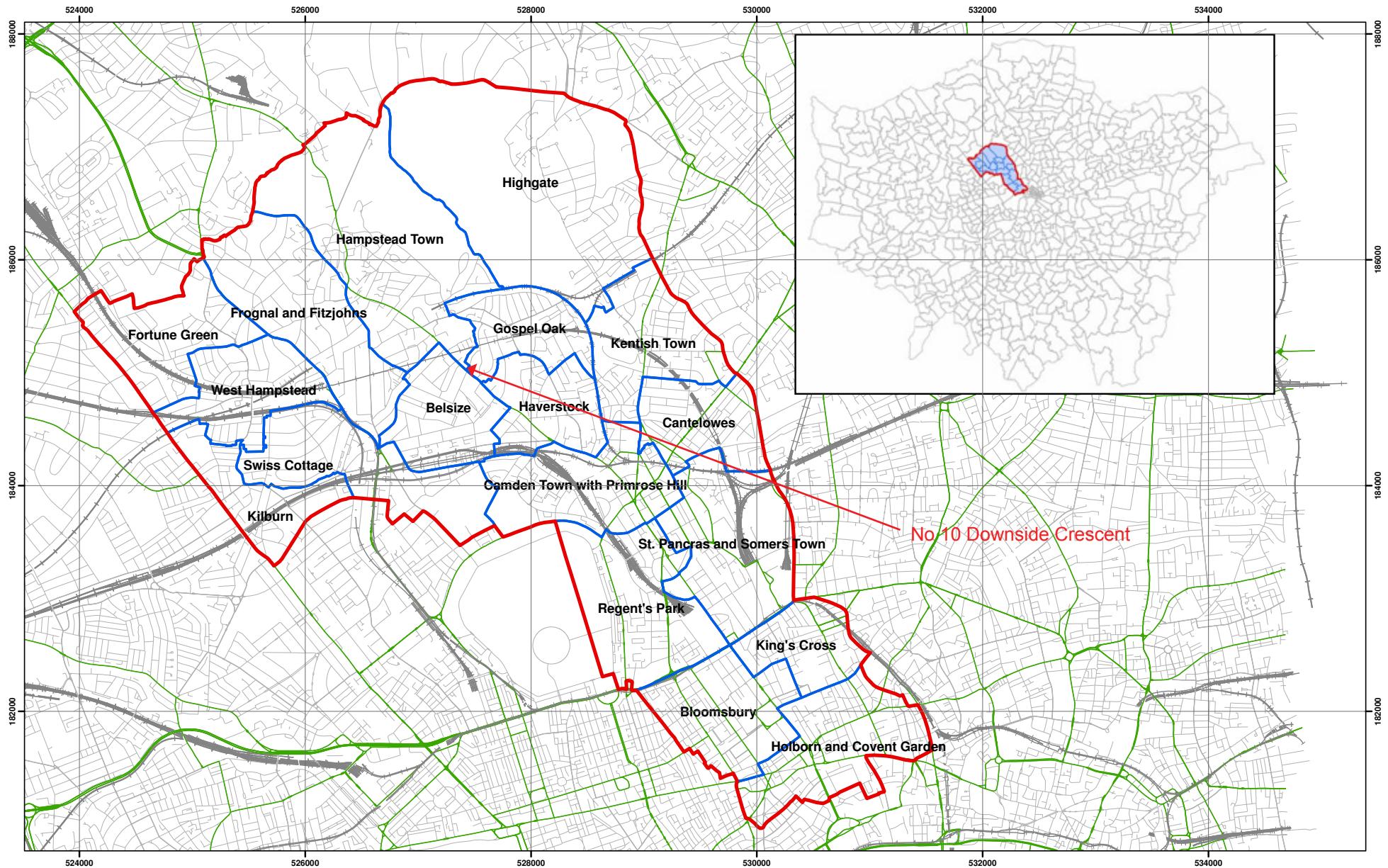
The screening flow chart raises two issues that require addressing:

1. the proposed foundations will be deeper than those of the
2. neighbours and that the ground is made up London Clay.

Both are common challenges that can be met with an adequately considered structural design.

The main walls of the basement will be created using a pinning sequence and ties together with reinforcement. Following the curing of these wall the space within the basement can be excavated, the floor slab added and the rest of the project carried out.

Appendix A - marked up hydrological/geological maps



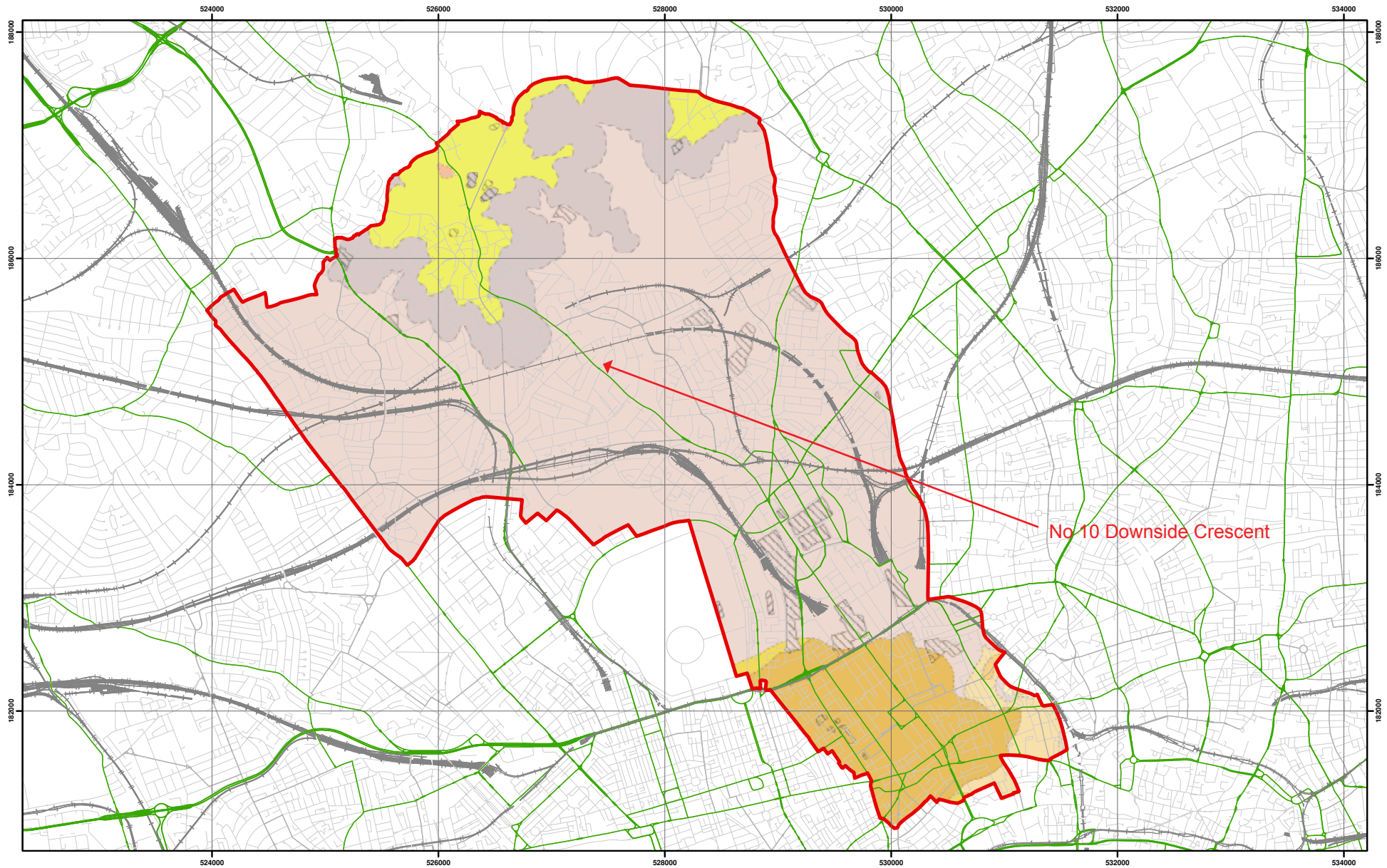
Coordinate System:
British National Grid
GCS_OSGB_1936

- Legend**
- London Borough of Camden
 - Camden Wards
 - Railway Lines
 - A Roads

**Camden Geological, Hydrogeological
and Hydrological Study**
Camden Administrative Boundaries

213923

FIGURE **1**



No 10 Downside Crescent

Data source - BGS Mapping - Scale 1:10,000

Scale at A3: 1:30,000
 Coordinate System:
 British National Grid
 GCS_OSGB_1936



Legend

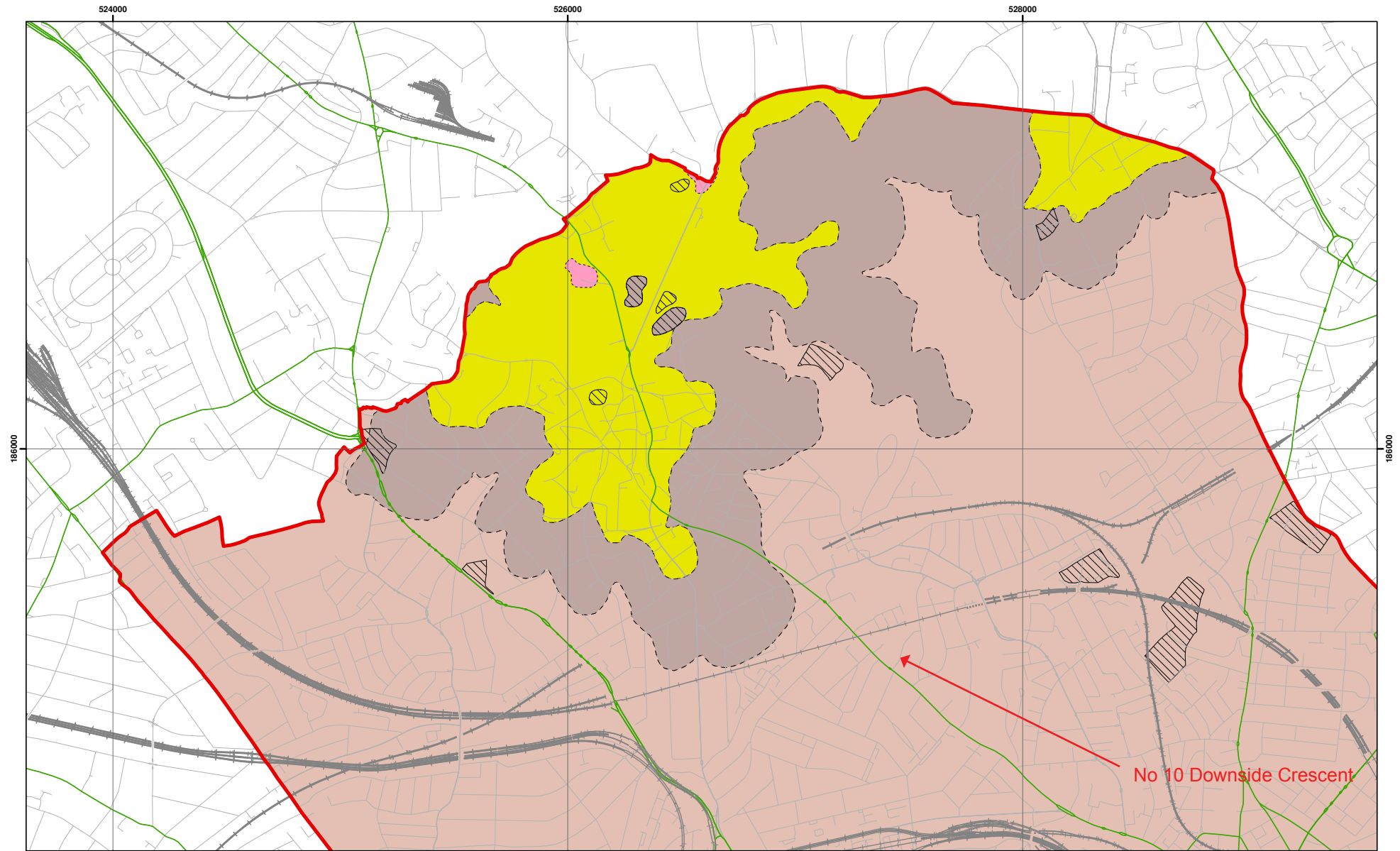
- London Borough of Camden
- Railway Lines
- A Roads
- BGS 1:10K Artificial Ground
- MADE GROUND
- WORKED GROUND
- ALLUVIUM
- HACKNEY GRAVEL FORMATION
- LANGLEY SILT FORMATION
- LYNCH HILL GRAVEL FORMATION
- STANMORE GRAVEL FORMATION
- BGS 1:10K Solid Geology
- BAGSHOT FORMATION
- CLAYGATE MEMBER
- LAMBETH GROUP
- LONDON CLAY FORMATION

**Camden Geological, Hydrogeological
 and Hydrological Study**
 Camden Geological Map

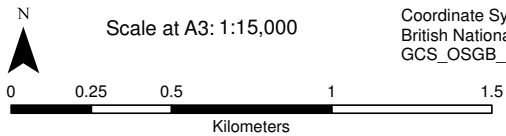
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FIGURE **3**

NB: Geological boundaries are largely indicative based on available geological mapping data



Data Source: BGS Mapping - Scale 1:10,000



Coordinate System:
British National Grid
GCS_OSGB_1936

Legend

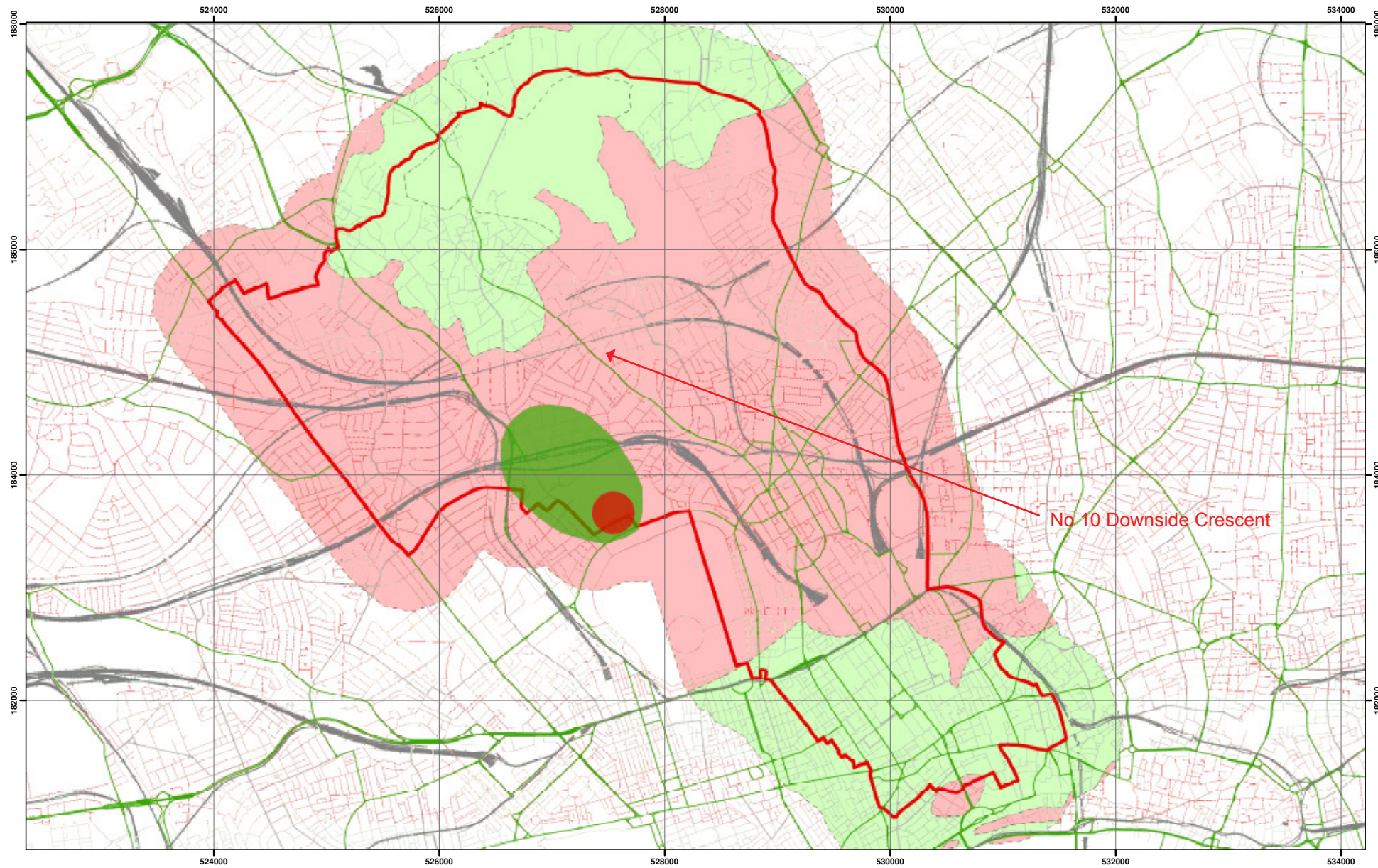
London Borough of Camden	BGS 1:10K Artificial Ground	BGS 1:10K Drift Geology	BGS 1:10K Solid Geology
Railway Lines	MADE GROUND	ALLUVIUM	BAGSHOT FORMATION
A Roads	WORKED GROUND	HACKNEY GRAVEL FORMATION	CLAYGATE MEMBER
		LANGLEY SILT FORMATION	LAMBETH GROUP
		LYNCH HILL GRAVEL FORMATION	LONDON CLAY FORMATION
		STANMORE GRAVEL FORMATION	

NB. Geological boundaries are largely indicative based on available geological mapping data

**Camden Geological, Hydrogeological
and Hydrological Study**
North Camden Geological Map

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FIGURE **4**



No 10 Downside Crescent

Environment Agency Aquifer Designation based on BGS Mapping

Scale at A3: 1:30,000

Coordinate System:
British National Grid
GCS_OSGB_1936

Legend

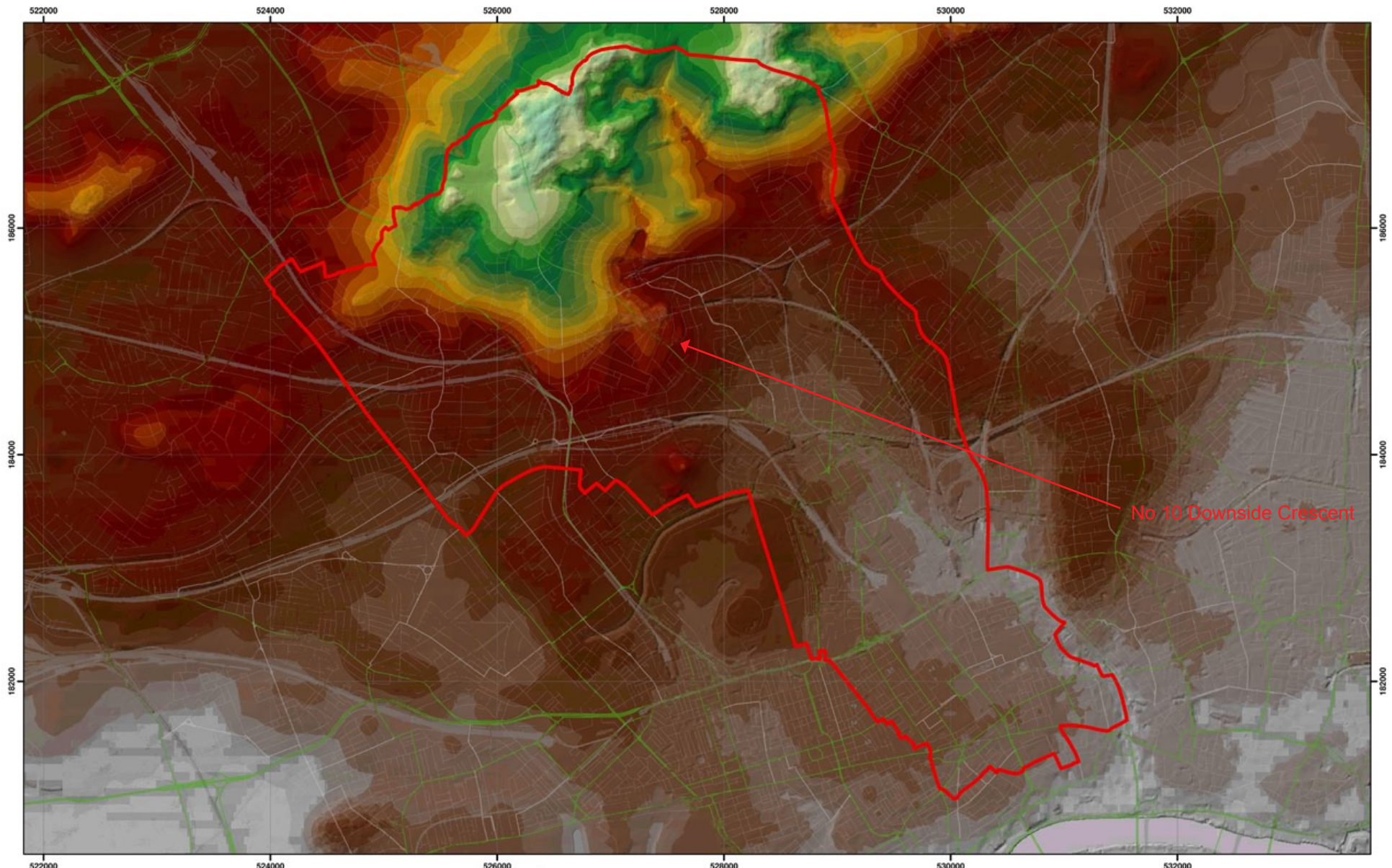
Borough of Camden	Aquifer Designation	Source Protection Zone
Railway Lines	Secondary A Aquifer	Outer Source Protection Zone
A Roads	Unproductive Strata	Inner Source Protection Zone

NB. Aquifer boundaries are indicative based on available geological mapping data

Camden Geological, Hydrogeological and Hydrological Study
Camden Aquifer Designation Map

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FIGURE 8



Topographic map based on digital terrain model provided by Camden Borough Council

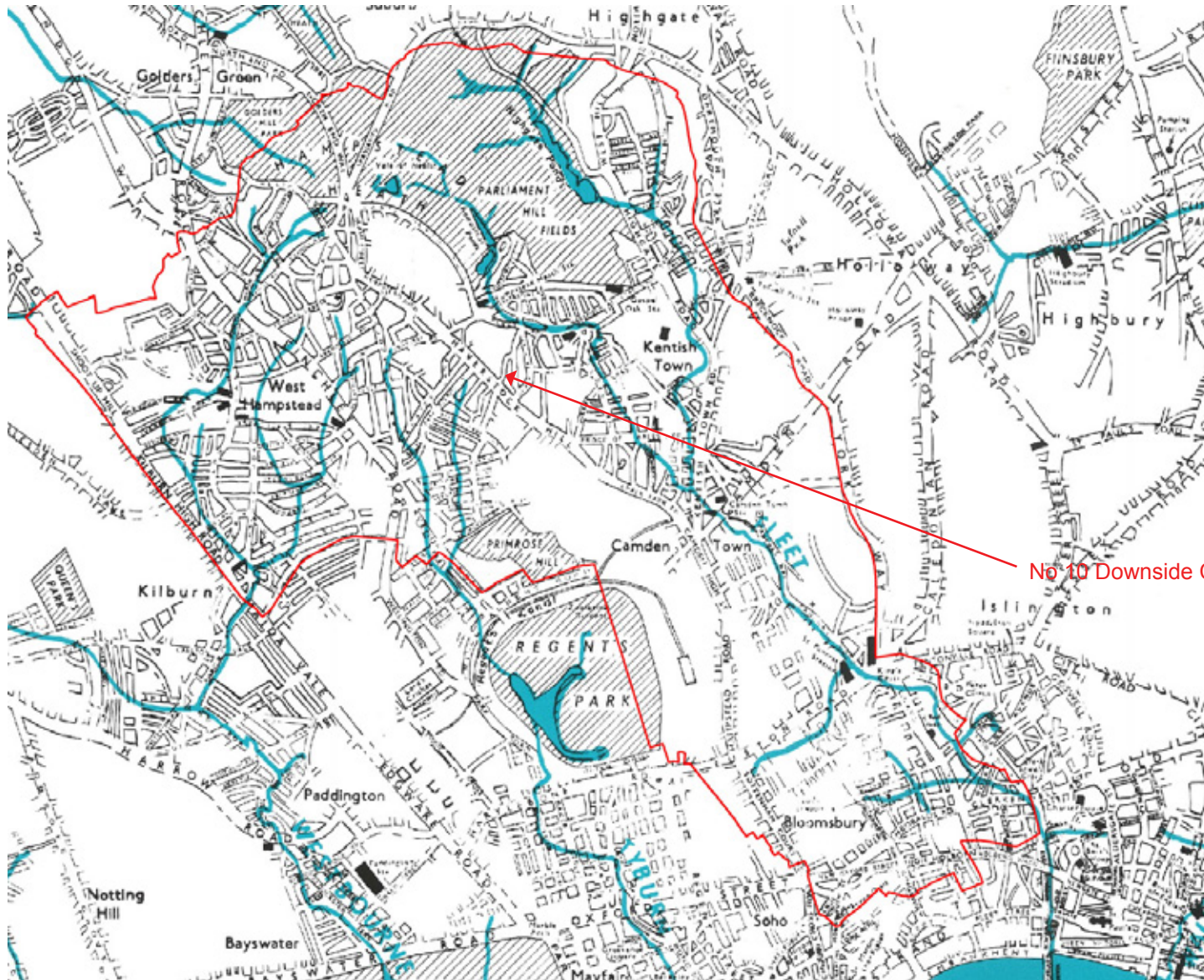
Scale at A3: 1:30,000

Coordinate System:
British National Grid
GCS_OSGB_1936

0 0.375 0.75 1.5 2.25 3 3.75
Kilometers



Camden Geological, Hydrogeological and Hydrological Study
Camden Topographic Map



No 10 Downside Crescent

Camden Geological, Hydrogeological and Hydrological Study
Watercourses

Source – Barton, Lost Rivers of London

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FIGURE 11