










Legend

-  Borough Administrative Boundary
-  Sewer Flooding Incidents

No. of Sewer Flood Records

	None
	1 - 5
	6 - 10
	11 - 20
	21 - 50
	51 - 100
	101+

Notes

1. Sewer flood records relate to internal and external flooding of properties
2. Data supplied by Thames Water Ltd and is correct as at June 2010
3. Point data supplied by Borough Council

London Borough of Richmond



Preliminary Flood Risk Assessment

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Scale at A3	Date	Drawn by	Approved by
1:45,000	13/05/2011	D.SKILTON	E.CRAVEN

Sewer Flooding Incidents

Consultants
 **CAPITA SYMONDS**
 Flood Risk Management

URS / Scott Wilson
 6 - 8 Greencoat Place
 London
 SW1P 1PL

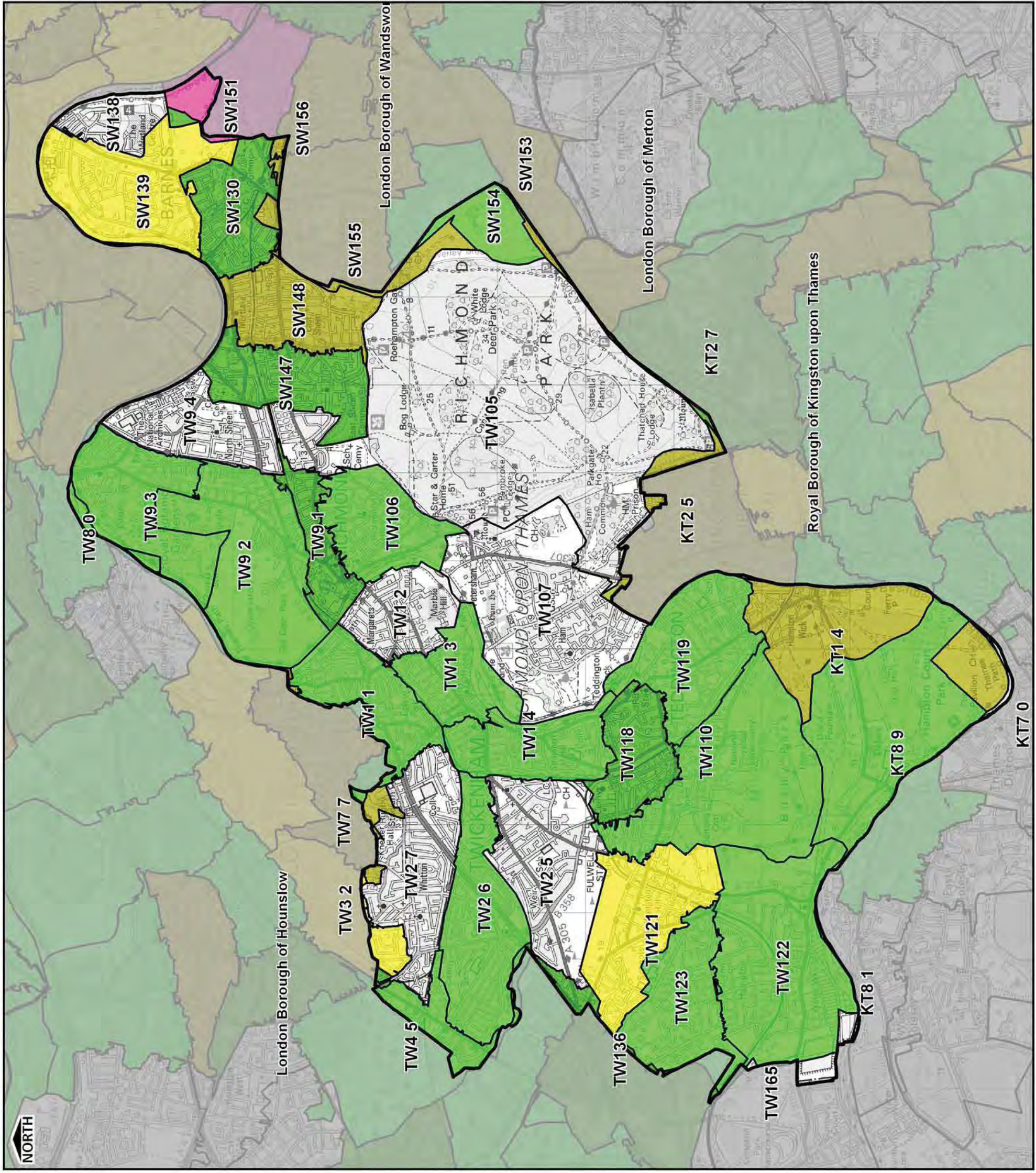
Drain London Programme Board Members





GREATER LONDON AUTHORITY

FIGURE 3



THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

- Legend**
- Borough Administrative Boundary
 - Permanent Water Bodies
 - Main River
 - Ordinary Watercourse
- Flood Depth**
- <0.1m
 - 0.1m to 0.25m
 - 0.25m to 0.5m
 - 0.5m to 1.0m
 - 1.0m to 1.5m
 - >1.5m

Notes

1. This map only shows the predicted likelihood of surface water flooding (this includes flooding from sewers, drains, small watercourses and ditches that occurs in heavy rainfall) for defined areas, and due to the coarse nature of the source data used, are not detailed enough to account for precise addresses.
2. Users of this map should refer to section 3.2 of the Surface Water Management Plan for a complete description of limitations and accuracy of the flood/hazard extents shown.
3. This map provides a strategic overview of surface water flood risk and may be subject to further analysis in the future.

London Borough of Richmond



Preliminary Flood Risk Assessment

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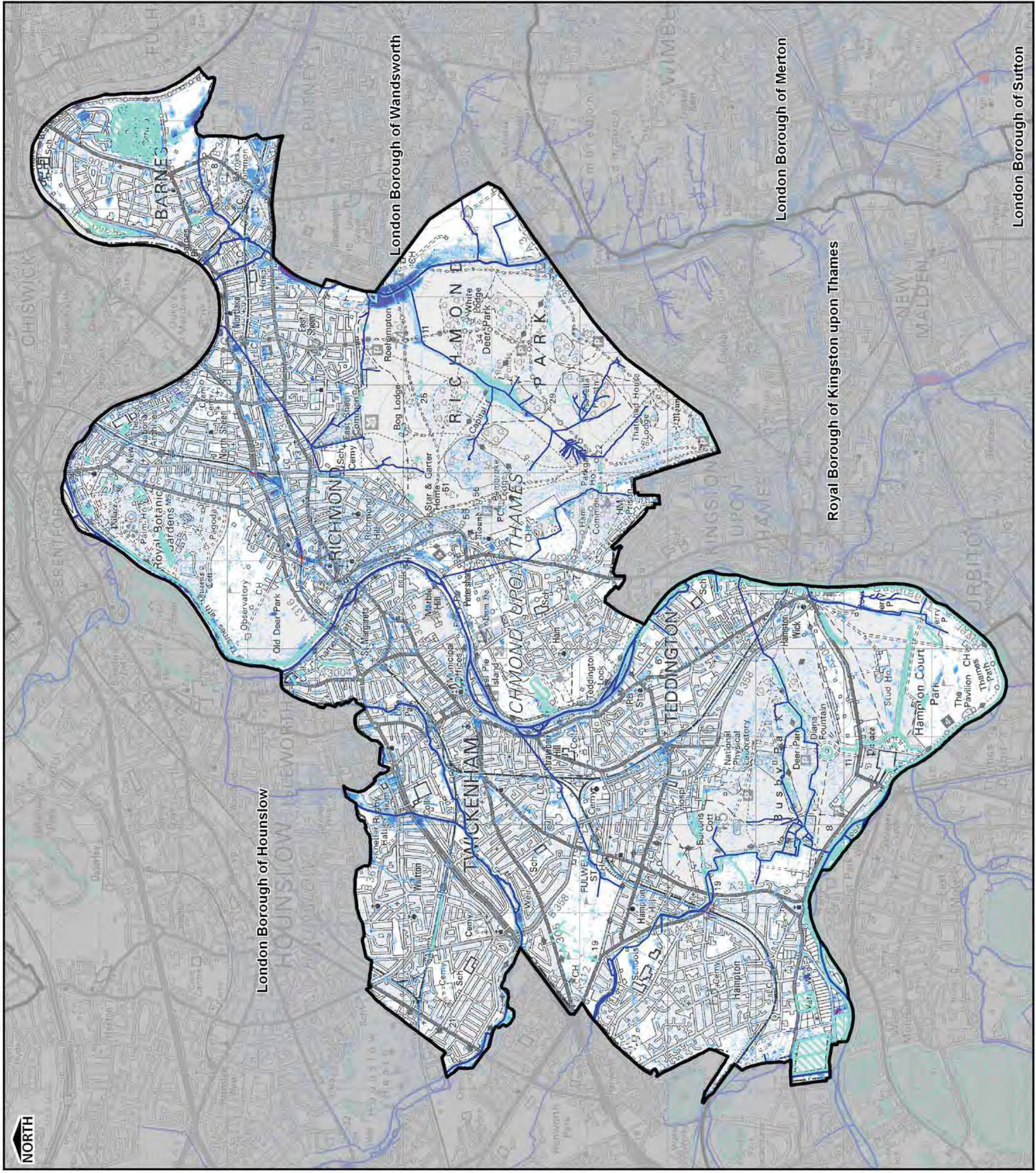
Scale at A3	Date	Drawn by	Approved by
1:45,000	13/05/2011	D.SKILTON	J.ROBINSON

**Surface Water Depth (m) 1 in 200
 Chance of rainfall event occurring
 in any given year (0.5% AEP)**

Consultants
CAPITA SYMONDS
 Flood Risk Management

Drain London Programme Board Members
Environment Agency
Thames Water
LONDON COUNCILS
GREATER LONDON AUTHORITY

FIGURE 4



0 1 2km

- Legend**
- Borough Administrative Boundary
 - Permanent Water Bodies
 - Main River
 - Ordinary Watercourse
- Flood Hazard**
- <0.75 Caution (Very low hazard)
 - 0.75 - 1.25 Moderate (Danger for some)
 - 1.25 - 2.0 Significant (Danger for most)
 - <2.0 Extreme (Danger for all)

Notes

1. Flood Hazard has been defined based upon the joint EA and Defra R&D Technical Report FD2320 (January 2006).
2. Degree of flood hazard can be interpreted as follows:
 - Caution: Flood zone with shallow flowing water or deep standing water
 - Moderate: Flood zone with deep or fast flowing water. Dangerous for children, the elderly and the infirm
 - Significant: Flood zone with deep fast flowing water. Dangerous for most people.
 - Extreme: Flood zone with deep fast flowing water. Dangerous for all (including emergency services)

London Borough of Richmond



Preliminary Flood Risk Assessment

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Scale at A3	Date	Drawn by	Approved by
1:45,000	13/05/2011	D.SKILTON	J.ROBINSON

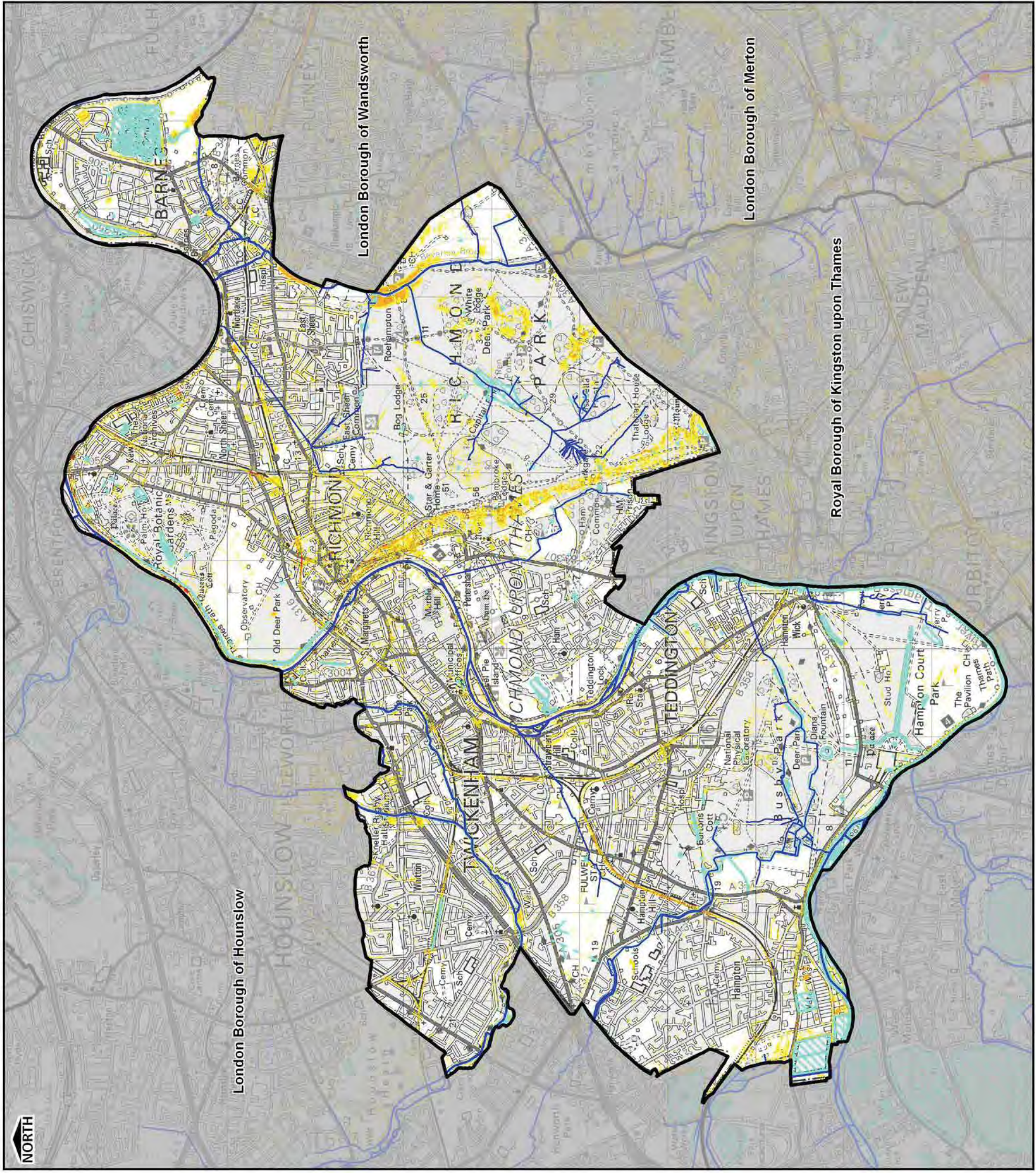
Surface Water Flood Hazard Rating
1 in 200 Chance of rainfall event
occurring in any given year (0.5% AEP)

Consultants
CAPITA SYMONDS
 Flood Risk Management

Drain London Programme Board Members



FIGURE 5



0 1 2km

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

Legend

- Borough Administrative Boundary
- Permanent Water Bodies
- Main River
- Ordinary Watercourse

Flood Depth

- <0.1m
- 0.1m to 0.25m
- 0.25m to 0.5m
- 0.5m to 1.0m
- 1.0m to 1.5m
- >1.5m

Notes

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Scale at A3	Date	Drawn by	Approved by
1:45,000	13/05/2011	D.SKILTON	J.ROBINSON

**Surface Water Depth (m) 1 in 100
 Chance of rainfall event occurring in any given year (1% AEP) plus Climate Change**

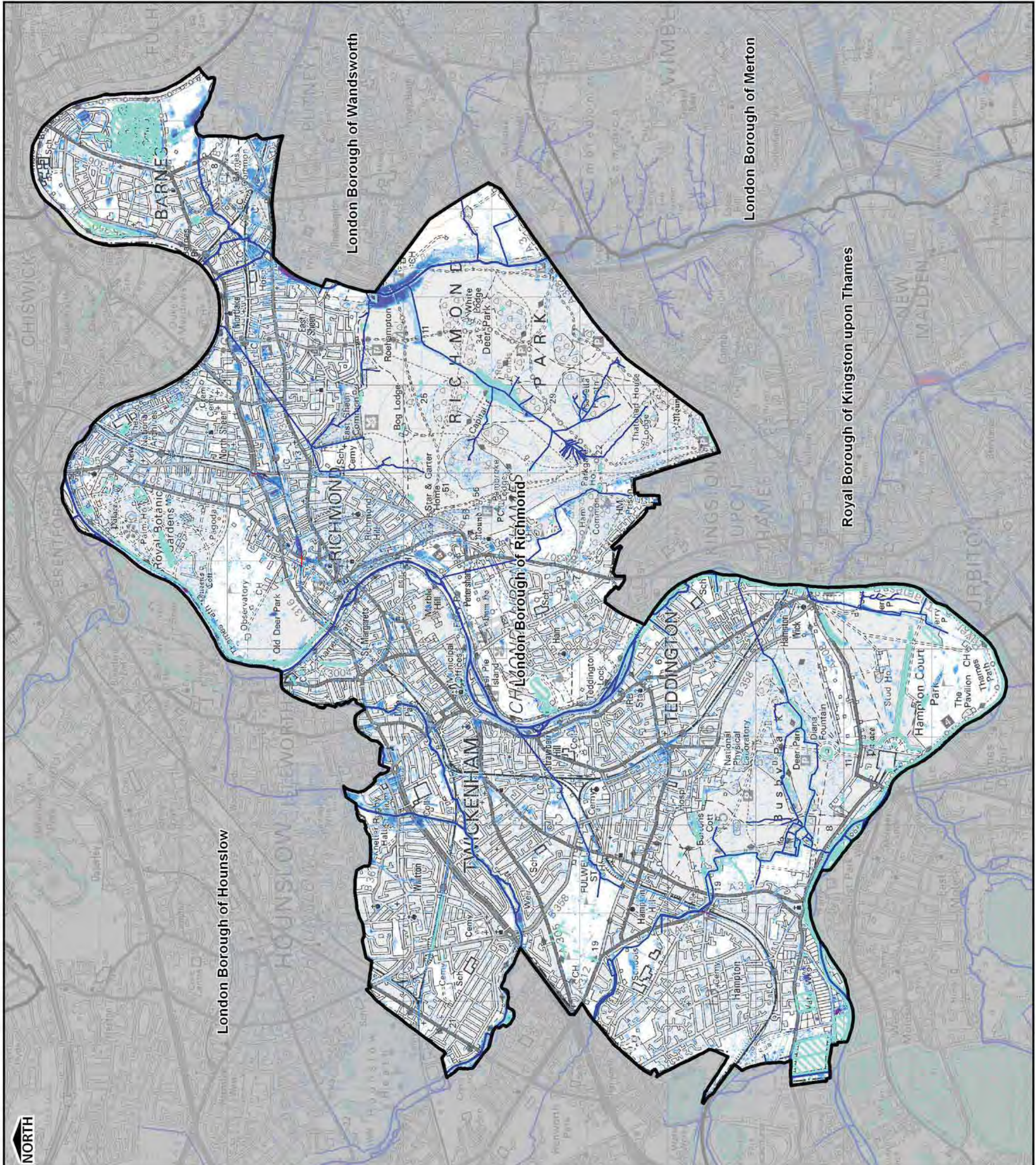
Consultants
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Drain London Programme Board Members

Environment Agency
 Thames Water
 LONDON COUNCILS
 GREATER LONDON AUTHORITY

FIGURE 6



0 1 2km

THIS DRAWING MAY BE USED ONLY FOR THE PURPOSE INTENDED

- Legend**
- Borough Administrative Boundary
 - Permanent Water Bodies
 - Main River
 - Ordinary Watercourse
- Flood Hazard**
- <0.75 Caution (Very low hazard)
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 - 1.25 - 2.0 Significant (Danger for most)
 - <2.0 Extreme (Danger for all)

Notes

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 - Extreme: Flood zone with deep fast flowing water. Dangerous for all (including emergency services)

London Borough of Richmond



Preliminary Flood Risk Assessment

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Scale at A3	Date	Drawn by	Approved by
1:45,000	13/05/2011	D.SKILTON	J.ROBINSON

**Surface Water Flood Hazard Rating 1 in 100
 Chance of rainfall event occurring in any
 given year (1% AEP) plus Climate Change**

Consultants



URS / Scott Wilson
 6-8 Greencoat Place
 London
 SW1P 1PL

Drain London Programme Board Members



GREATER LONDON AUTHORITY

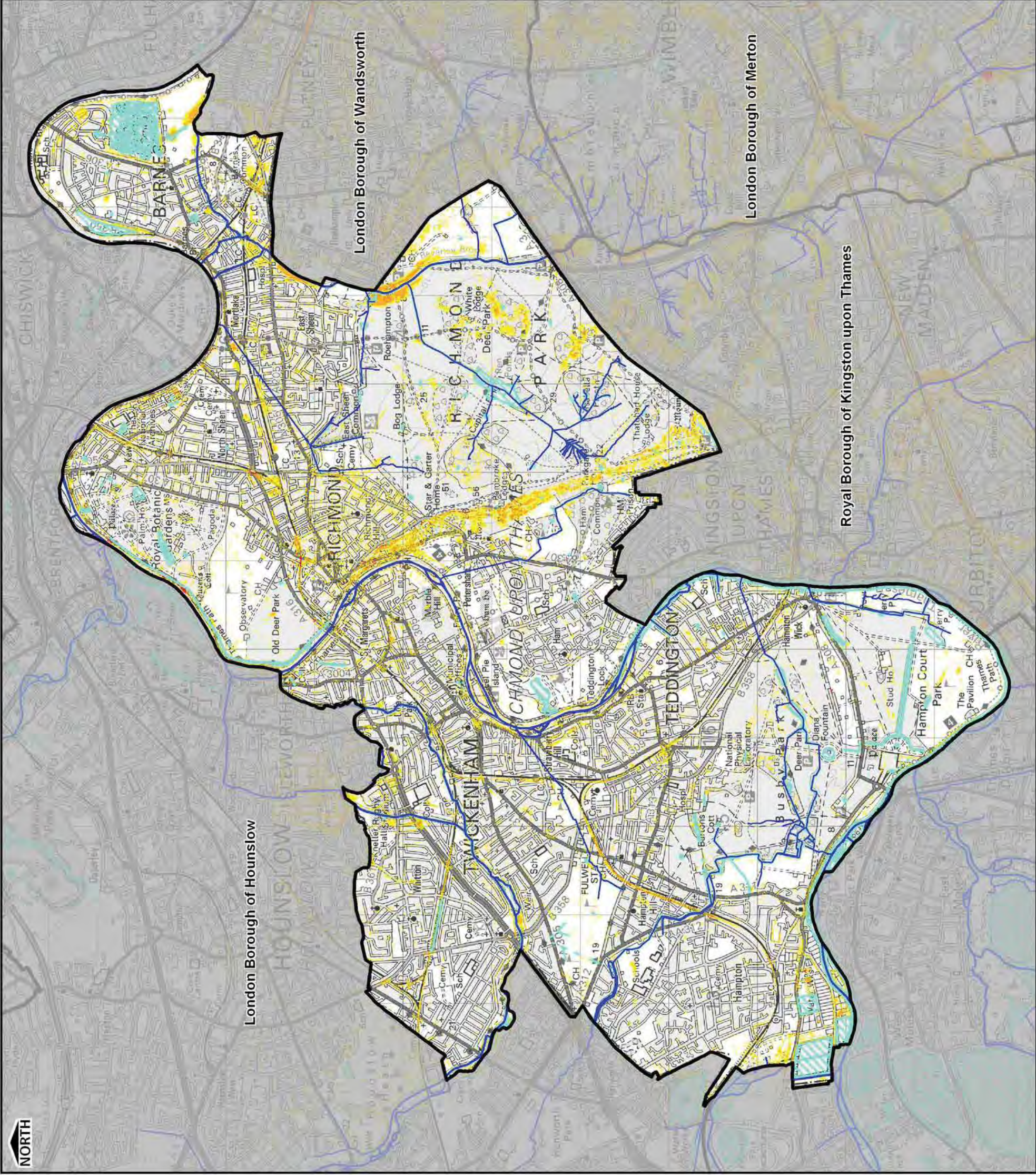


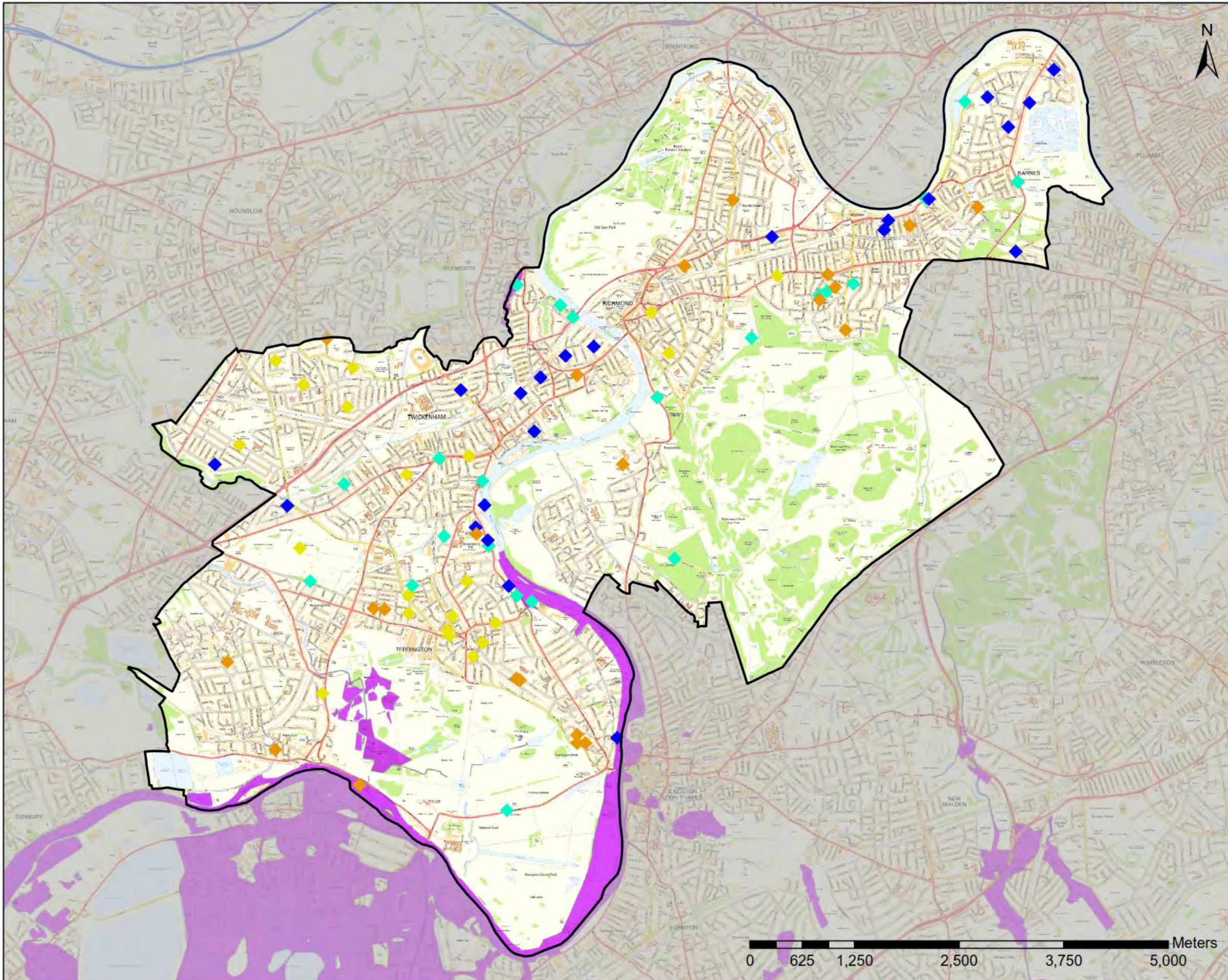
FIGURE 7

Appendix F SFRA Figures

SFRA Figures produced by Capita | ULS, date unknown unless otherwise stated:

- **Figure 1** 'Historic Flooding' dated June 2014
- **Figure 5** 'London Borough of Richmond Upon Thames Strategic Flood Risk Assessment Level 1'
- **Figure C 3** 'Tidal Breach Flood Hazard – River Thames and River Crane; Maximum Likely Water Level – Year 2100 Tidal Profile (Twickenham)'
- **Figure C 5** 'Fluvial Flood Hazard – River Thames; 1% chance in any one year plus climate change fluvial only flood extent (Twickenham)'
- **Figure D** 'Areas Benefiting from Defences and Groundwater, Flooding Incidents'
- **Figure E** 'BGS Susceptibility to Groundwater Flooding' date unknown
- **Figure G** 'Updated Flood map for Surface Water, 1% chance of flooding in any one year'
- **Figure I** 'Sewer Flooding Incidents'

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THIS DRAWING IS TO BE USED ONLY FOR THE PURPOSE OF ISSUE THAT IT WAS ISSUED FOR AND IS SUBJECT TO AMENDMENT

Legend

- Administrative Boundary
- Environment Agency Historic Flood Map

Reported Flooding Incidents

- River
- Multiple
- Surface Water
- Groundwater

Notes
 Flooding incidents have been mapped based on Council records available at the time of the production of the Local Flood Risk Management Strategy. In many cases incidents of flooding may not have been reported to the Council and will therefore not be shown on this map.

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DRAWN BY	CHECKED BY	PASSED BY	DATE
GA	LT	PH	June 2014

SCALE @ A3	ISSUING OFFICE
1:42,000	Gresham Street

Purpose of Issue
 DRAFT REPORT FOR CONSULTATION

Client

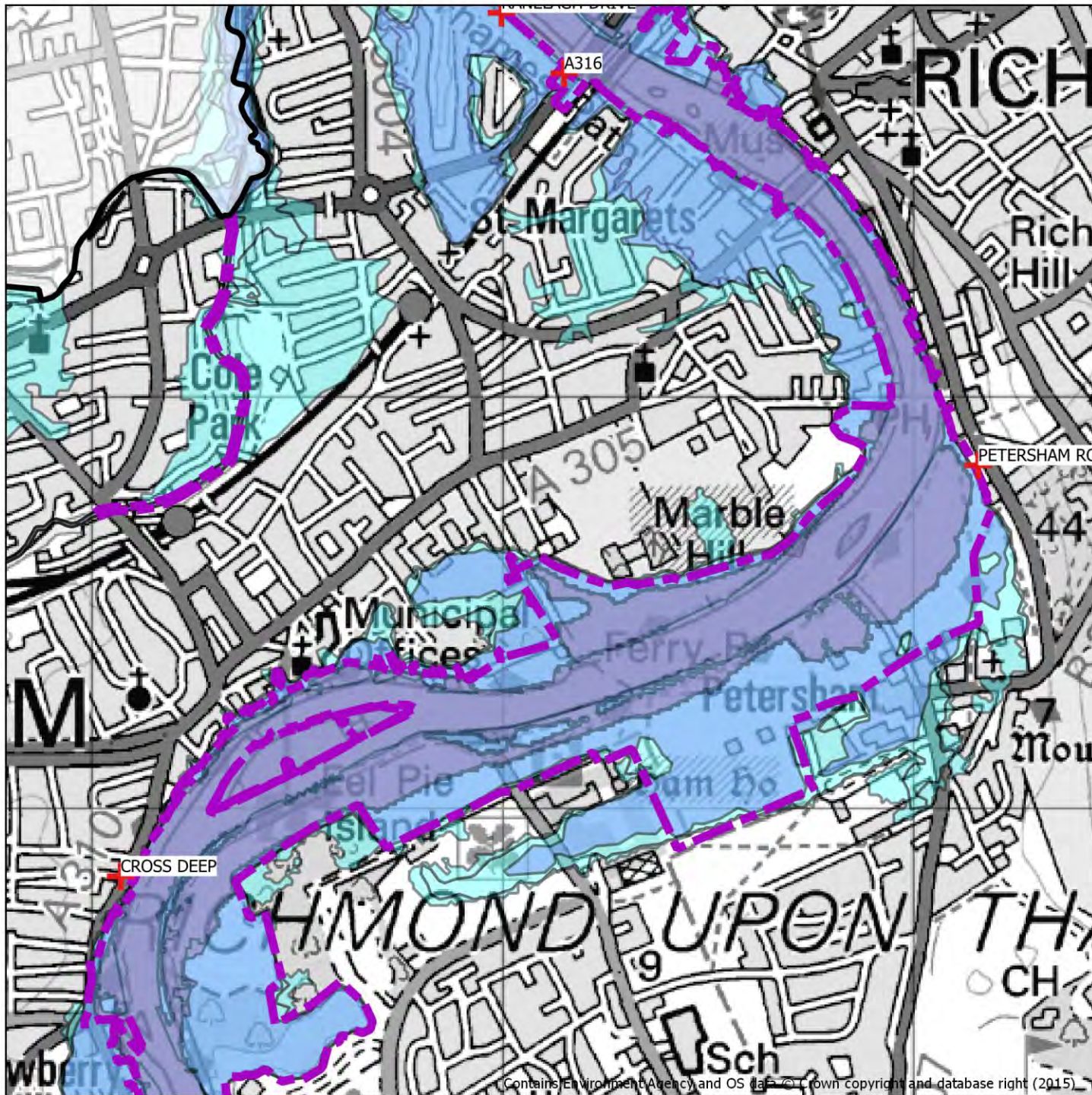
Project Title
 LONDON BOROUGH OF RICHMOND LOCAL FLOOD RISK MANAGEMENT STRATEGY

Drawing Title
 HISTORIC FLOODING







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Consultant

DRAWING NUMBER	REV
FIGURE 1	A



Legend

-  Borough Boundary
-  Localised Drainage Issues
-  Flood Defences
-  Flood Zone 3b
-  Flood Zone 3a
-  Flood Zone 2

in association with



Metis Consultants Limited



Client



Project Title

London Borough of Richmond Upon Thames Strategic Flood Risk Assessment Level 1

Drawing Title

Risk of fluvial and tidal flooding within character area R5 - Twickenham, Eel Pie & St Margaret's

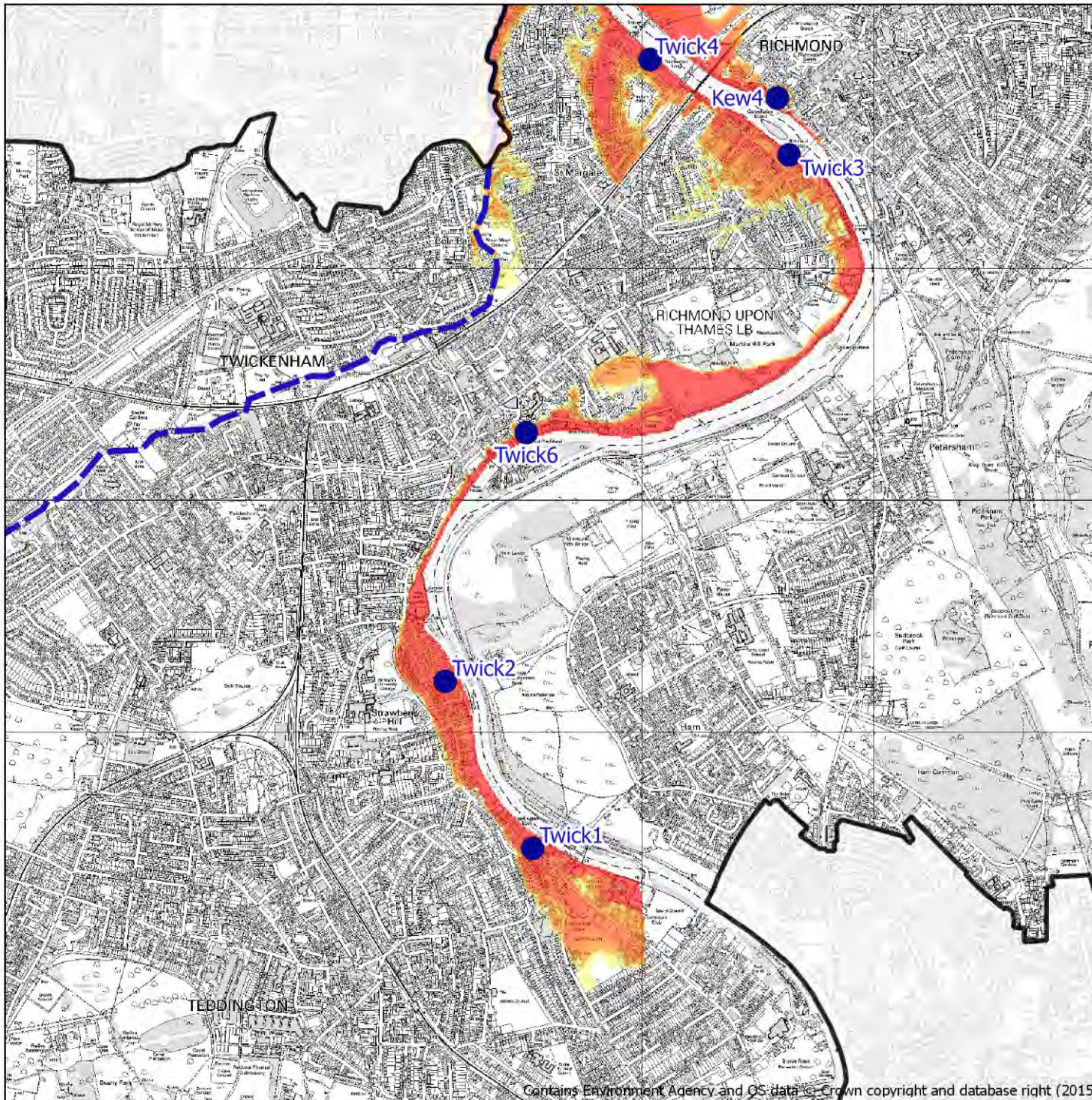
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Drawing Number

FIGURE 5

1:14,000





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Legend

□ Borough Boundary

— River Crane

Breach Hazard Rating

□ Low

□ Moderate

□ Significant

□ Extreme

● Modelled Defence Breach Locations

In association with



Metis Consultants Limited



Client



Project Title

London Borough of Richmond Upon Thames Strategic Flood Risk Assessment Level 1

Drawing Title

Tidal Breach Flood Hazard - River Thames and River Crane
Maximum Likely Water Level - Year 2100 Tidal Profile
(Twickenham)

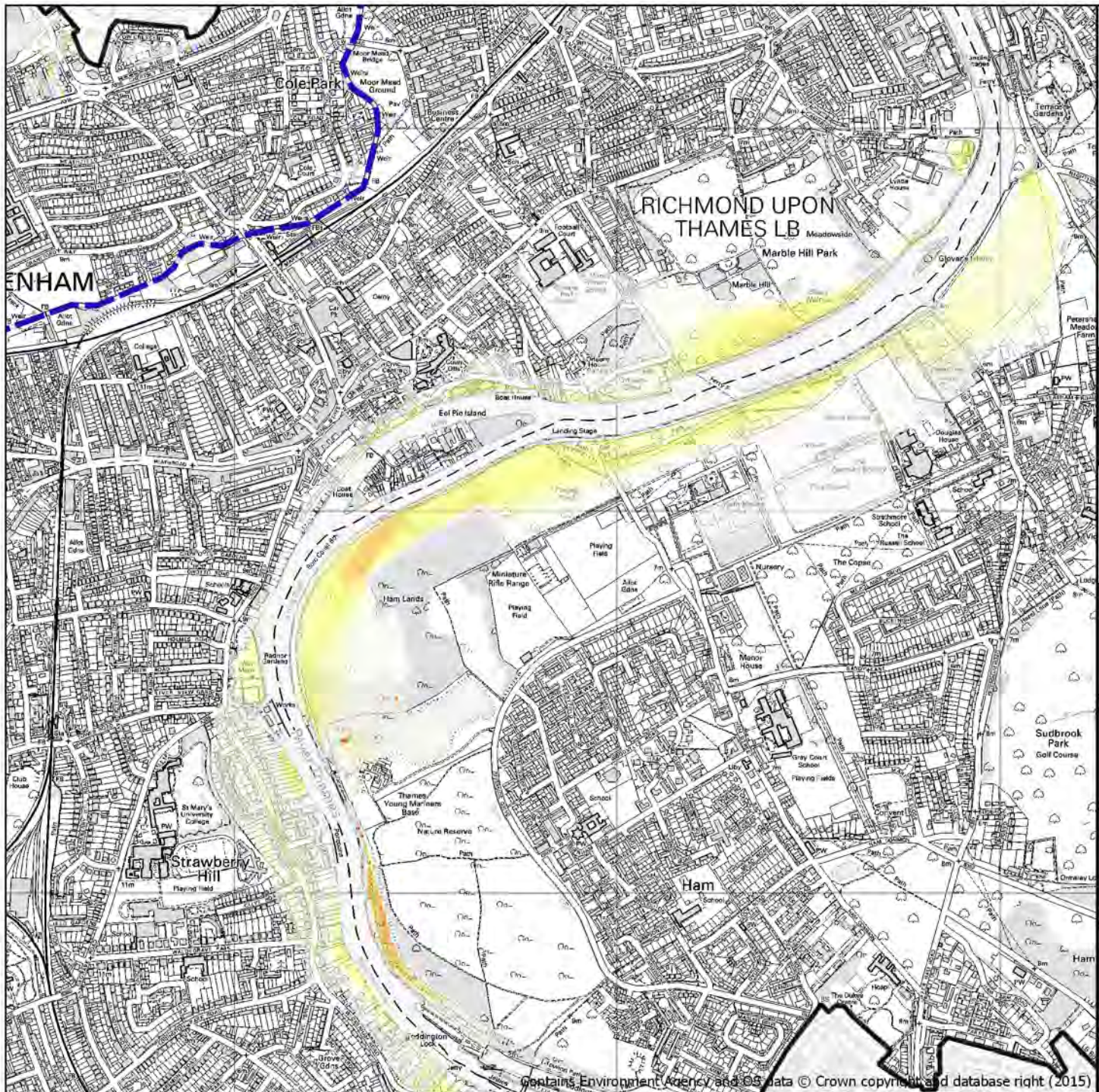
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Drawing Number

Figure C 3

1:25,000





Legend

-  Borough Boundary
-  River Crane
- Hazard Rating**
-  Low
-  Moderate
-  Significant
-  Extreme

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Metis Consultants Limited



Client



Project Title

London Borough of Richmond upon Thames Strategic
Flood Risk Assessment Level 1

Drawing Title

Fluvial Flood Hazard - River Thames
1% chance in any one year plus climate change fluvial
only flood extent (Twickenham)

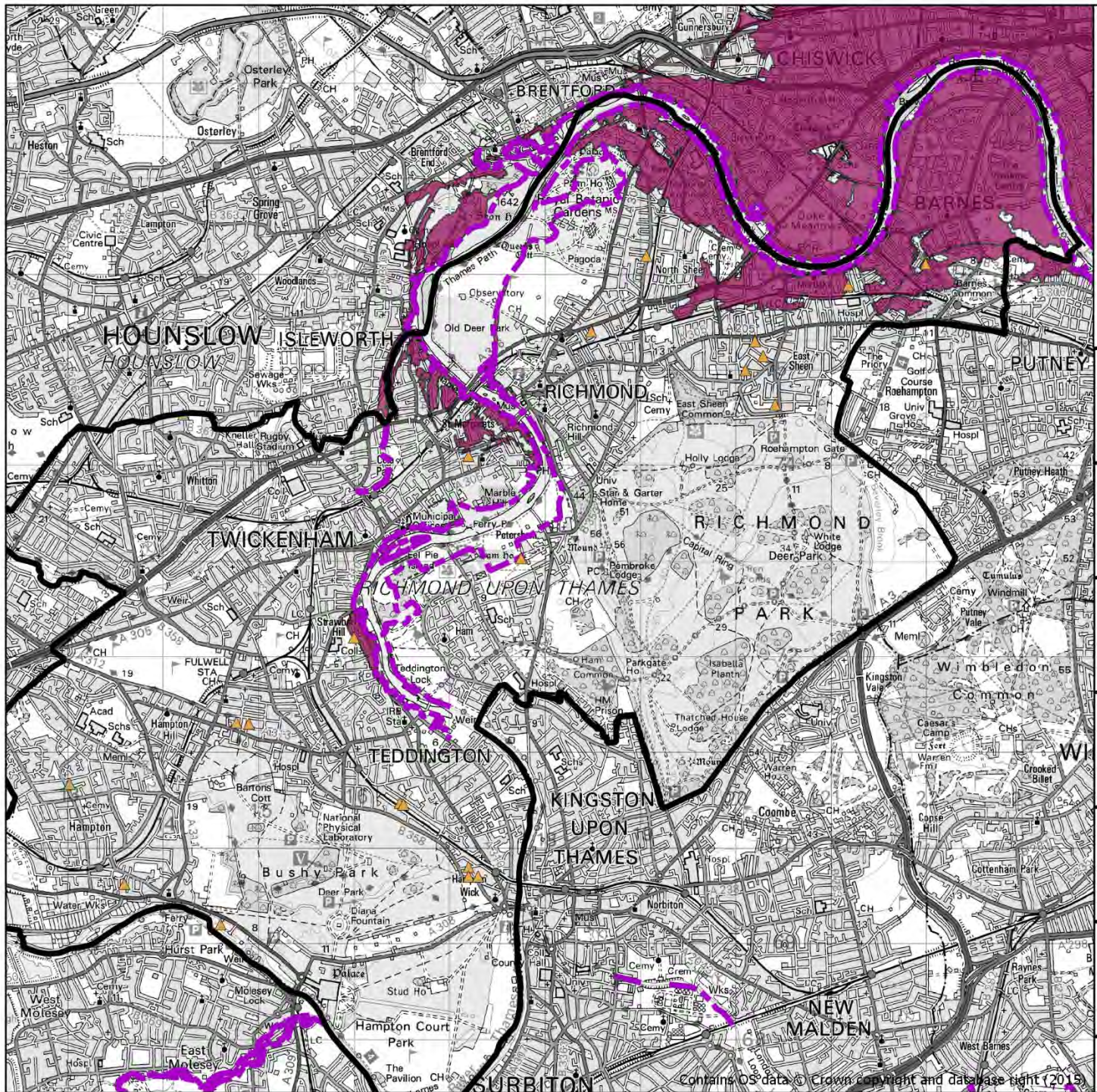
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Drawing Number





Figure C 5

1:15,000





Legend

-  Borough Boundary
-  Groundwater Flooding Incidents
-  Flood Defences
-  Areas benefiting from flood defences

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Metis Consultants Limited



Client



Project Title

London Borough of Richmond Upon Thames Strategic Flood Risk Assessment Level 1

Drawing Title

Areas Benefiting from Defences and Groundwater Flooding Incidents

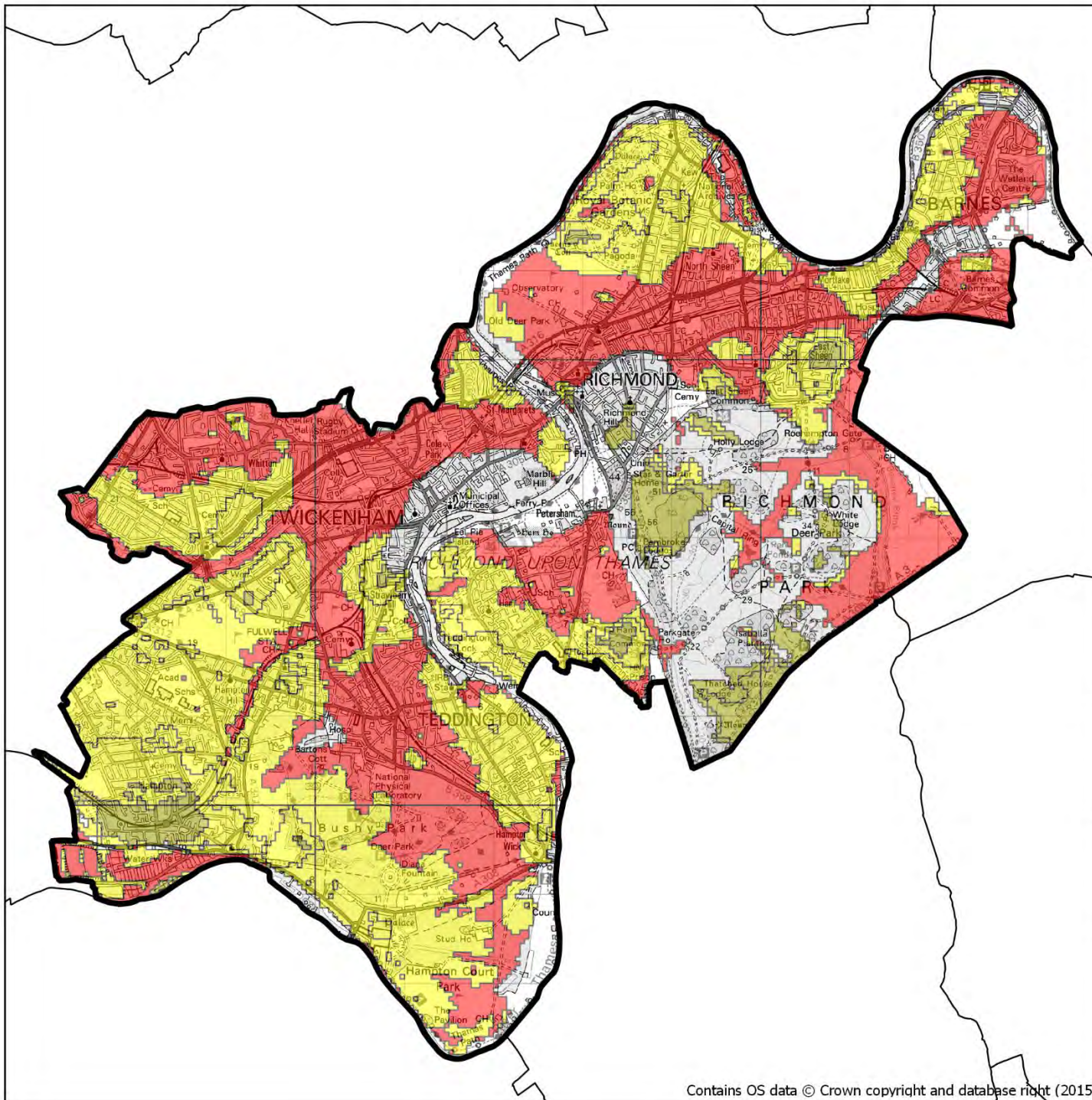
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FIGURE D


1:65,000







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Legend

 Borough Boundary

BGS Susceptibility to Groundwater Flooding

 Limited potential for groundwater flooding to occur

 Potential for groundwater flooding of property situated below ground level

 Potential for groundwater flooding to occur at surface

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Client



Project Title

London Borough of Richmond Upon Thames Strategic
Flood Risk Assessment Level 1

Drawing Title

BGS Susceptibility to Groundwater Flooding

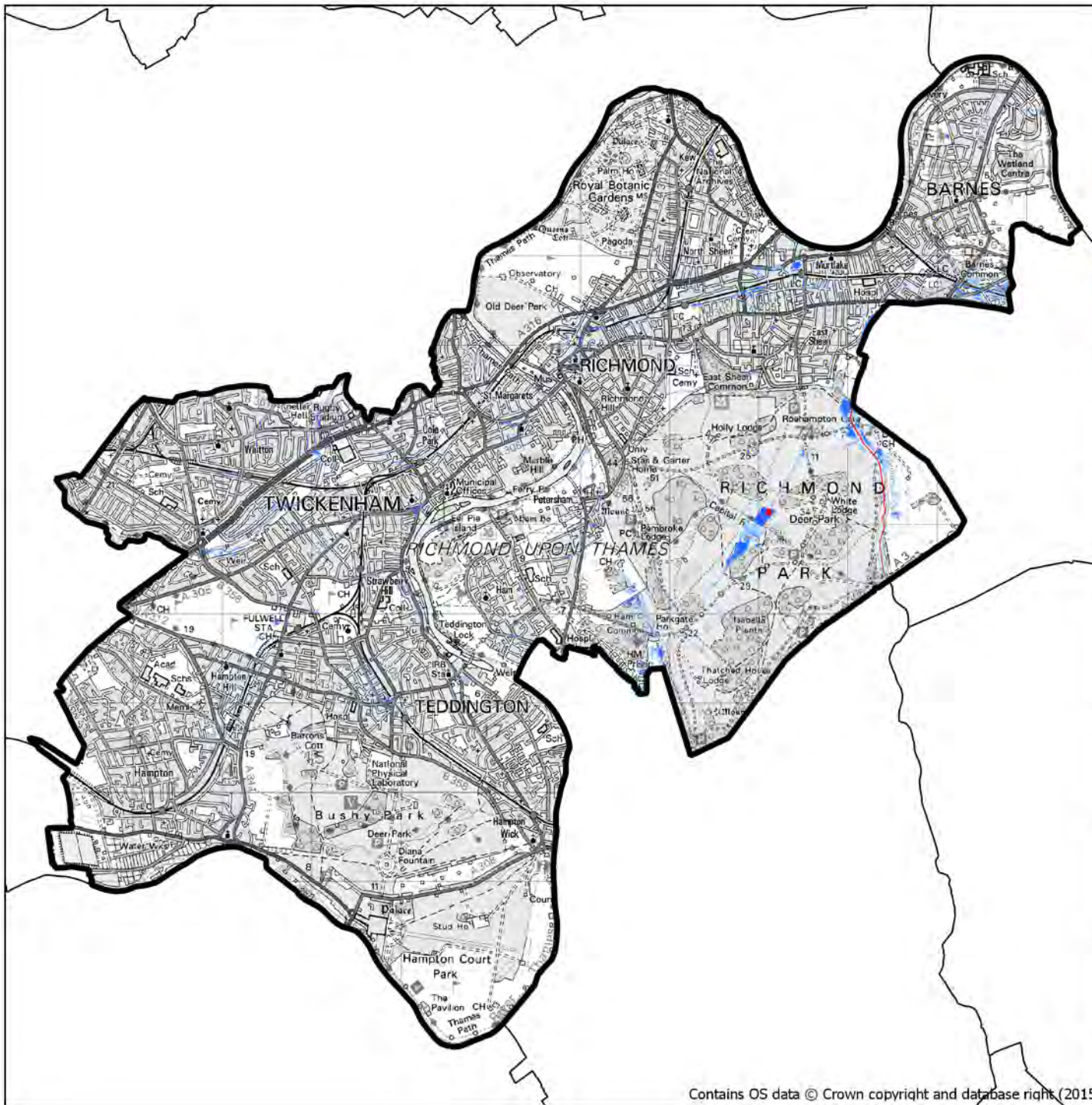
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Drawing Number

FIGURE E

1:65,000





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Legend

Borough Boundary

Predicted Surface Water Flood Depth (m)

- 0.00 - 0.15
- 0.15 - 0.30
- 0.30 - 0.60
- 0.60 - 0.90
- > 1.20

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Client



Project Title

London Borough of Richmond upon Thames Strategic
Flood Risk Assessment Level 1

Drawing Title

Updated Flood Map for Surface Water

1% chance of flooding in any one year

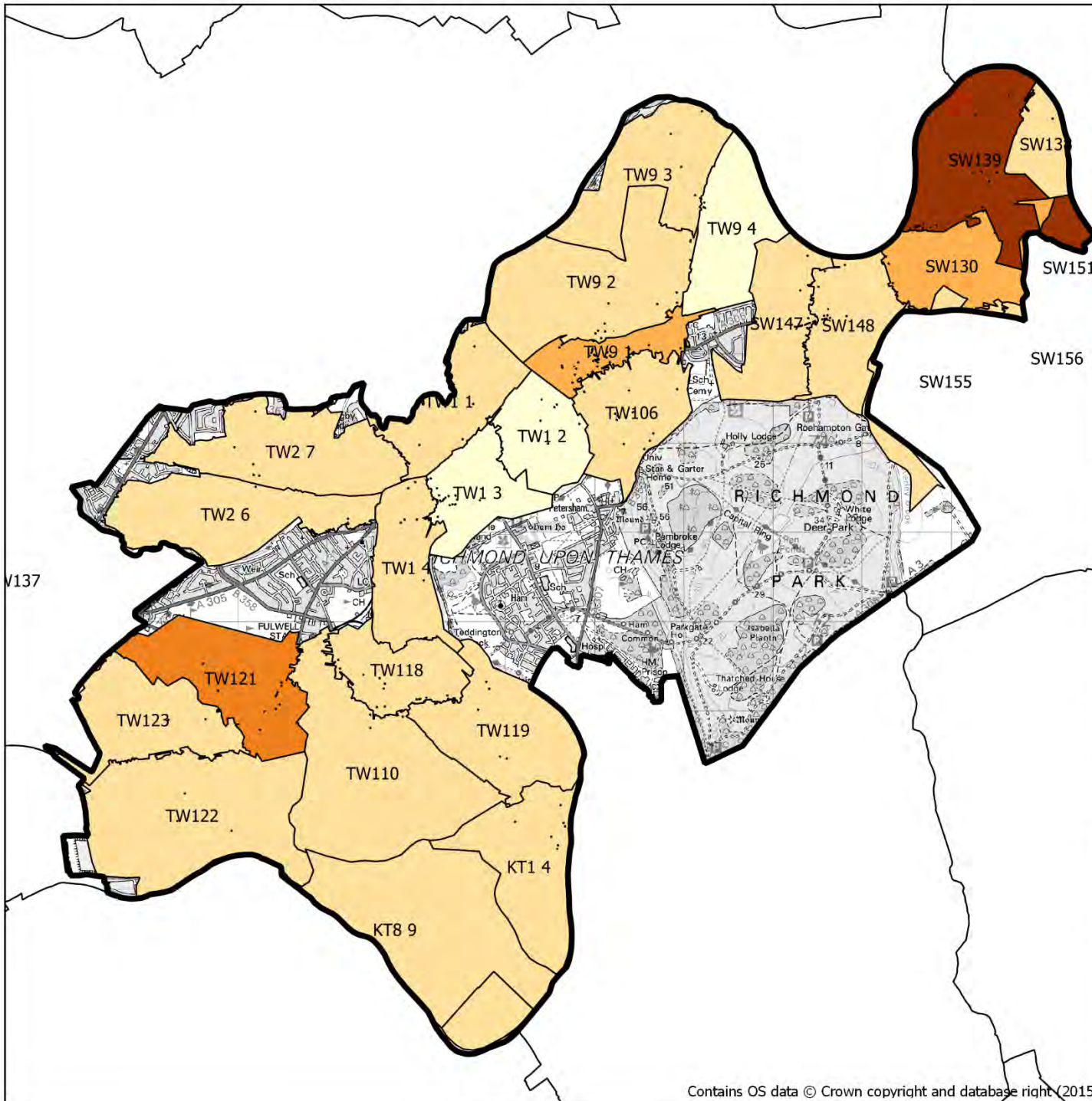
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Drawing Number

FIGURE G

1:65,000

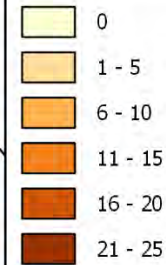




Legend

Borough Boundary

Number of Sewer Flooding Incidents based on DG5 data



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Client



Project Title

London Borough of Richmond Upon Thames Strategic Flood Risk Assessment Level 1

Drawing Title

Sewer Flooding Incidents

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Drawing Number

FIGURE I

1:65,000



Appendix G Previous Environment Agency Correspondence

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David Lamont
London Borough of Richmond upon
Thames
Planning Department
Civic Centre (44) York Street
Twickenham
Middlesex
TW1 3BZ

Our ref: SL/2017/116984/02-L01
Your ref: 17/1094/FUL
Date: 24 May 2017

Dear David

Proposal

- 1. Marble Hill House: Minor internal alterations; repair to damp affected flat wall plaster, installation of a new platform lift. External decoration and repair work; repairs to windows, if a window is substantially rotten, partial or full replacement of joinery elements may be necessary.**
- 2. Stable block: Single storey rear extension for use as a café, with associated mechanical plant; Internal and external alteration.**
- 3. Landscaping: New soft and hard landscaping works, including restoration of gardens, upgrade of sport pitches; replacement of seating, play areas and storage facilities.**
- 4. Boundary treatment, walls and fencing: Partial demolition in part, repairs and new.**
- 5. Service yard: New service yard, access and associated storage facilities.**
- 6. Sports centre: Internal refurbishment .**

Marble Hill House, Marble Hill Park, Richmond Road, Twickenham, TW1 2NL.

Thank you for consulting us on the above application. We have reviewed the information submitted and have **no objection** to the proposed development.

Majority of the works are behind the Thames Tidal Flood Defences and are not show to be a risk of flooding from a breach of the defences. The flood defence are the natural rise of the land the applicant should ensure the proposed landscaping works does not involve to the lower of the defence level.

The proposed development will only meet the National Planning Policy Framework (NPPF) policy to ensure flood risk is not increased elsewhere if the following planning condition is included.

Condition

The development permitted by this planning permission shall be carried out in accordance with the approved flood risk assessment (FRA) Proposed Works at Marble Hill Park, Twickenham Flood Risk Assessment (001) and the compensatory flood storage measures detailed within the FRA.



The mitigation measures shall be fully implemented prior to occupation and subsequently in accordance with the timing / phasing arrangements embodied within the scheme, or within any other period as may subsequently be agreed, in writing, by the local planning authority.

Reason

To prevent flooding on site and elsewhere by ensuring that compensatory storage of flood water is provided.

Informative

Under the terms of the Water Resources Act 1991, and the Thames Land Drainage Byelaws 1981, the prior consent of the Environment Agency is required for any proposed works or structures, in, under, over or within 16 metres of the landward edge of the tidal defence of the River Thames, designated a 'main river'. From 6th April 2016, the Flood Defence Consent regime moved into the Environmental Permitting Regulations to become Flood Risk Activity Permits. The charges for the new Permits are different and some lower risk activities may be Excluded or Exempt from the Permitting Regulations. Please contact us for more details.

Please contact the Partnerships and Strategic Overview team at is PSO-Thames@environment-agency.gov.uk or our National Customer Contact Centre on 03708 506 506 or enquiries@environment-agency.gov.uk for more information

Further details and guidance are available on the GOV.UK website: <https://www.gov.uk/guidance/flood-risk-activities-environmental-permits>

The ecology report identifies the woodland along the southern boundary of the site (closest to the river) to have a number of mature/veteran trees. We support the retention on the majority of trees in this area as part of the proposals (drawing 581_PL_L_10).

Construction and demolition waste - waste duty of care code of practice

The waste duty of care code of practice applies to you if you produce, carry, keep, dispose of, treat, import or have control of waste in England or Wales.

The law requires anyone dealing with waste to keep it safe, make sure it's dealt with responsibly and only given to businesses authorised to take it.

To ensure your development complies with environmental legislation and avoid prosecution you should follow the steps below

- Check you and your contractors are complying with the waste duty of care code of practice
- Check the Public Register to ensure contractors carrying out waste excavation and/or treatment activities have got the correct authorisation and are in fact the legal operator under that authorisation
- Check the Public Register to ensure companies removing demolition and construction waste are registered and follow the guidance in rightwaste rightplace website to ensure any waste from your development site is being processed correctly
- Report any illegal activity, pollution incidents or unsuspected contamination to our 24 hour environment incident hotline 0800 80 70 60

- If reusing waste ensure that the principles of the CL;AIRE Definition of Waste Code of Practice are upheld and that the waste being reused does not present a risk to the environment and/or human health- relevant link <http://www.claire.co.uk/projects-and-initiatives/dow-cop>

Decision notice request

We record the outcome of planning decisions and request the decision notice is emailed to kslplanning@environment-agency.gov.uk.

[I hope our comments are helpful, if you have any question please contact me.](#)

Yours sincerely

Joe Martyn
Planning Advisor

Direct dial 020 3025 5546

Direct e-mail kslplanning@environment-agency.gov.uk

cc Mr Neil Davidson