



Development Consent Order

Application Reference Number: WW010001

Documents for Certification September 2014

We, Lindsay Speed and Sarah Fairbrother hereby certify that this is a true copy of the environmental statement referred to in Article 61 (1) (f) of the Thames Water Utilities Limited (Thames Tideway Tunnel) Order 2014.

Lindsay Speed

Sarah Fairbrother

September 2014

**Thames
Tideway Tunnel**



Creating a cleaner, healthier River Thames

Thames Tideway Tunnel
Thames Water Utilities Limited



Application for Development Consent

Application Reference Number: WWO10001

Environmental Statement

Doc Ref: **6.2.15**

Volume 15: Heathwall Pumping Station figures

APFP Regulations 2009: Regulation **5(2)(a)**

Hard copy available in

Box **67** Folder **B**
January 2013

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Creating a cleaner, healthier River Thames

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Thames Tideway Tunnel

Environmental Statement

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Thames Tideway Tunnel

Environmental Statement

Volume 15 Heathwall Pumping Station site assessment

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Thames Tideway Tunnel

Environmental Statement

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1 Plans from the Book of Plans

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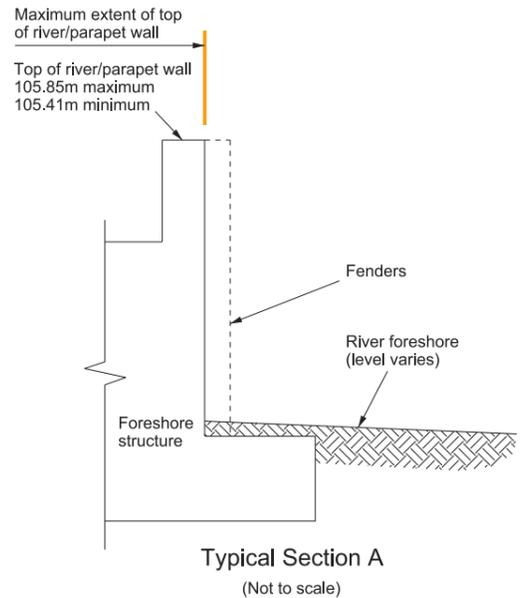


Table 1

Above ground permanent structure	Maximum height above finished ground level (Minimum heights are in brackets where applicable)
Ventilation column(s) serving the shaft	8.0m (4.0m)
Ventilation column(s) serving the SWSR interception chamber	8.0m (4.0m)
Ventilation column(s) serving the Heathwall Pumping Station CSO interception chamber	6.0m
SWSR Interception and flap valve chamber	1.5m

(SWSR denotes the South West Storm Relief Sewer)



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Keyplan:



Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key:

- Limits of land to be acquired or used (LLAU)
- Zone within which all permanent site structures would be located
- Zone within which the shaft would be located
- Zone within which permanent above ground structures would be located (those listed in Table 1)
- Zone within which required landscaping would be located
- Maximum extent of intertidal terracing
- Maximum extent of temporary works platform

Notes:

1. All dimensions and levels are approximate.
2. The Site Works Parameter Key Plan identifies each zone independently.
3. The zone within which the shaft would be located would include all permanent works including shaft walls (including appropriate allowances for construction tolerances) and if applicable under-reaming. Shaft construction temporary works may be located within or outside this zone provided they are located within the Limits of land to be acquired or used.



Scale 1:500 at A1
1:1000 if reproduced at A3

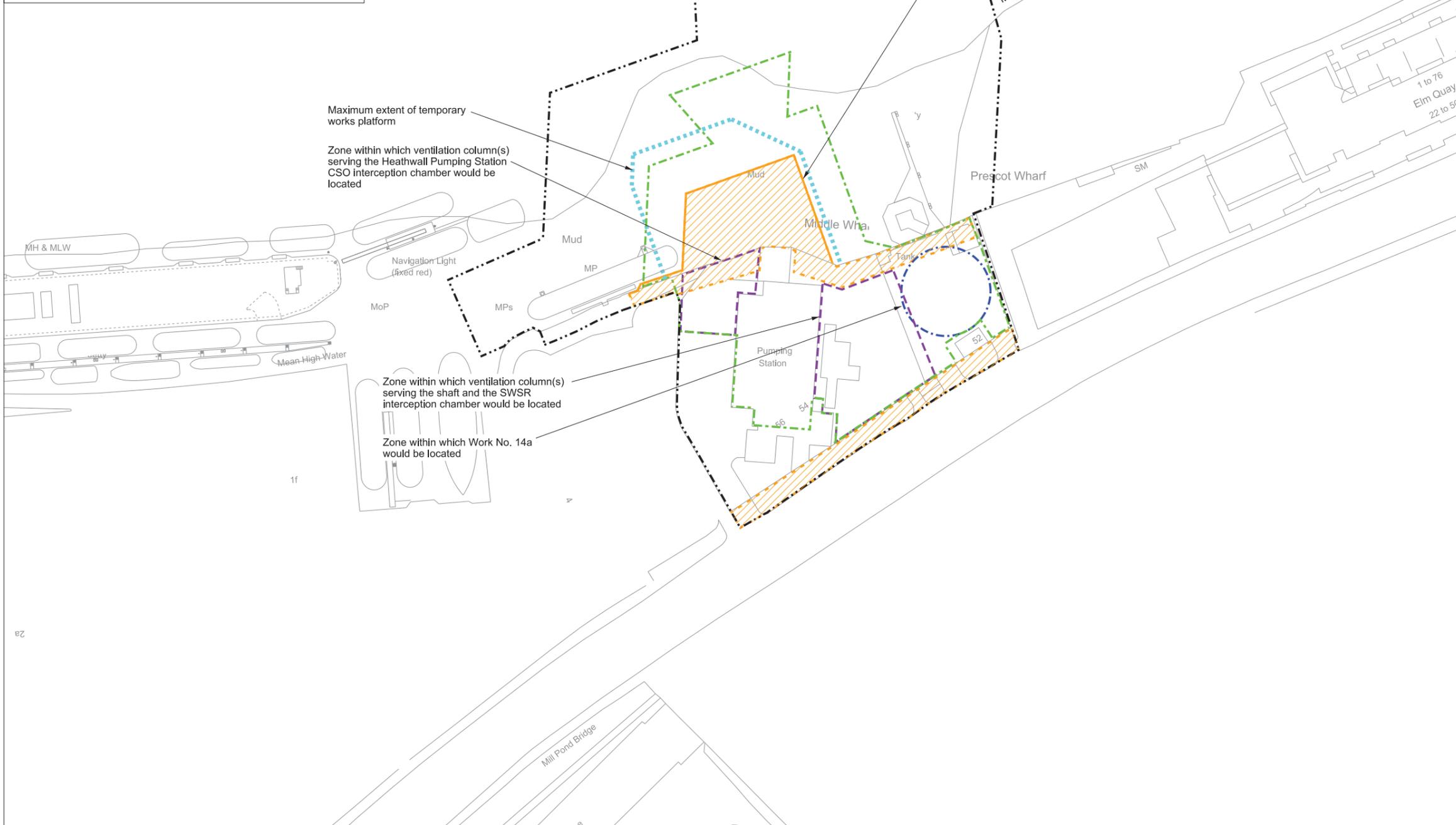
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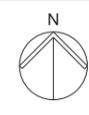
Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Application for Development Consent
Site works parameter plan

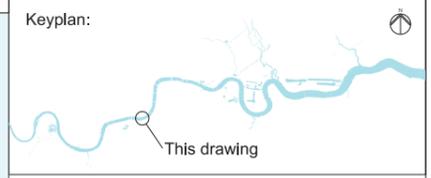
Book of plans - section 16
DCO-PP-14X-HEAPS-160005
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames





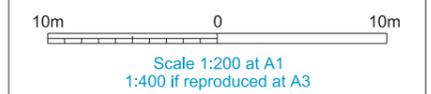
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- Key:**
- Limits of land to be acquired or used (LLAU)
 - Above ground structures to be removed
 - Below ground structures to be removed or infilled
 - Structure to be removed and relocated or reinstated
 - Trees to be pruned

- Notes:**
1. Existing ventilation columns to be replaced.
 2. Minor items to be removed (e.g. barriers, bollards etc.) are not shown.
 3. General activities of site clearance such as removal of hardstanding and foundations, stripping of topsoil and clearance of minor vegetation not shown.



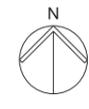
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Location
Heathwall Pumping Station
London Borough of Wandsworth

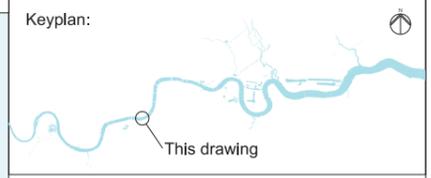
Document Information
Application for Development Consent
Demolition and site clearance

Book of plans - section 16
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- Key:**
- Limits of land to be acquired or used (LLAU)
 - Existing public right of way
 - Provision of permanent permissive right of way
 - ▨ Area of temporary suspension of public rights of navigation
 - Area of permanent extinguishment of public rights of navigation
 - Ap ● Access to permanent works
 - Ac ● Access to construction works

- Notes:**
1. This plan does not show stopping up and diversions of limited duration (e.g. hoarding erection, minor utility diversions and minor highway works).
 2. Only rights of way in or close to worksites are shown. The full extents of rights of way are not shown where they cease to be relevant to the project.
 3. This drawing shows the LLAU associated with the Heathwall Pumping Station site only.



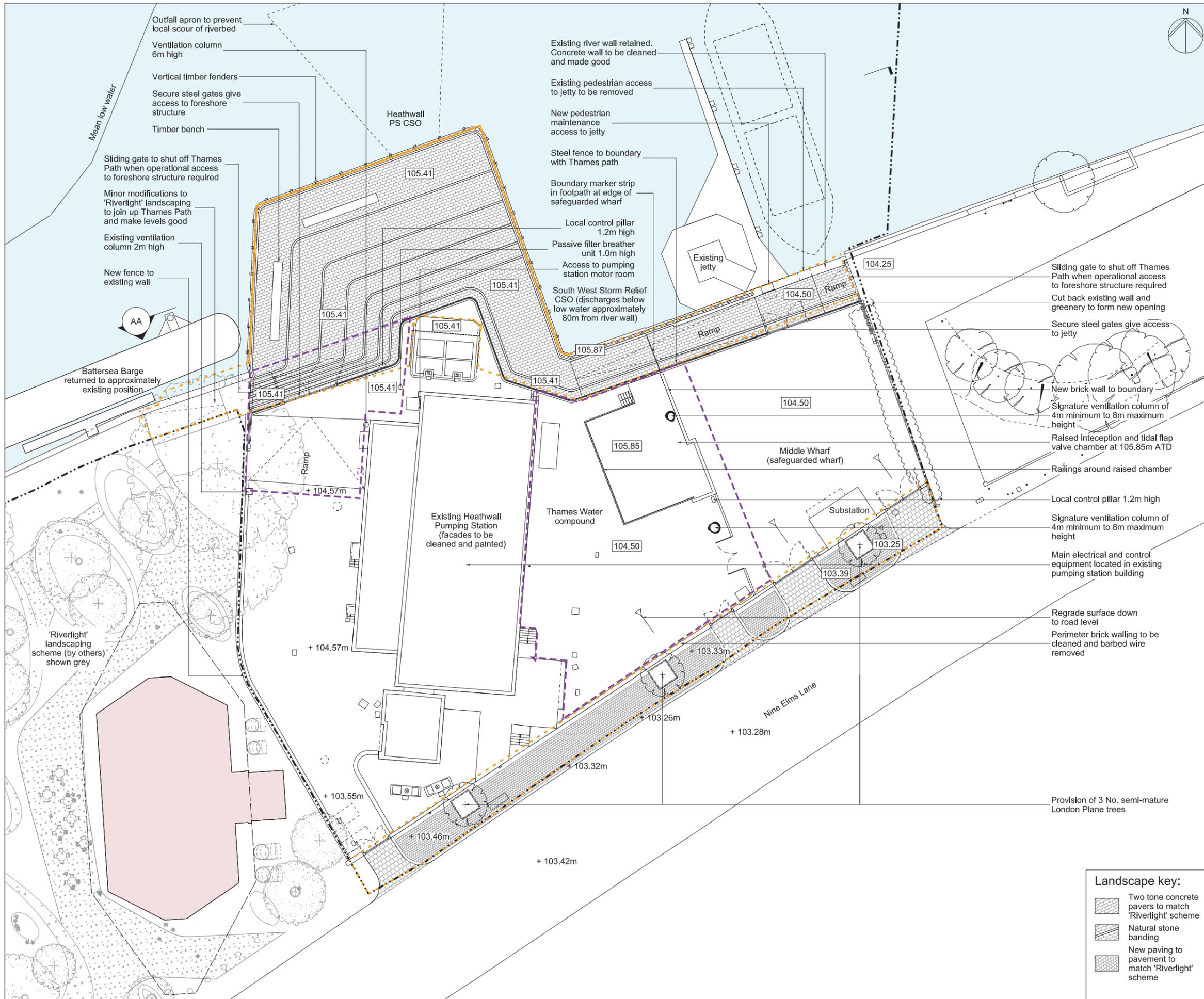
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Location
 Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
 Application for Development Consent
 Access plan

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Keyplan:

Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key:

- Limits of land to be acquired or used (LLAU)
- - - Zone within which permanent above ground structures would be located
- - - Zone within which required landscaping would be located
- Maximum extent of foreshore structure
- + 105.40m Existing levels (shown in metres above tunnel datum)
- 105.40 Proposed levels (shown in metres above tunnel datum)
- Consented development footprint (by others)
- Existing trees within surveyed area (trunk sizes vary)
- Proposed trees

Notes:

- All dimensions and levels are approximate.
- Any discrepancy between the location of structures and the parameters marked on the drawings are due to differences between the Ordnance Survey base and the topographic survey base, both of which have been used in the preparation of this drawing.
- The above ground structures in the "Save for the layout of above ground structures which is illustrative" statement are those listed in table 1 on the Site works parameter plan.
- Access covers not shown on this drawing. Refer to the Permanent works layout for an indication of the extent of access covers required.

10m 0 10m

Scale 1:200 at A1
1:400 if reproduced at A3

INDICATIVE
Save for layout of above ground structures which is illustrative

Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Application for Development Consent
Proposed
Landscape plan
Book of plans - section 16
DCO-PP-14X-HEAPS-160008
January 2013

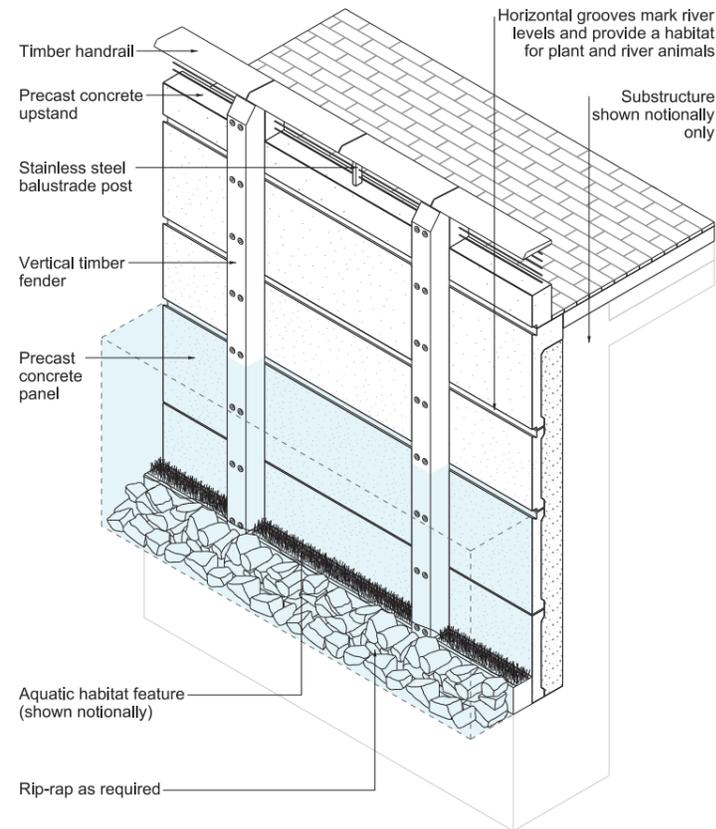
Landscape key:

- Two tone concrete pavers to match 'Riverlight' scheme
- Natural stone banding
- New paving to pavement to match 'Riverlight' scheme

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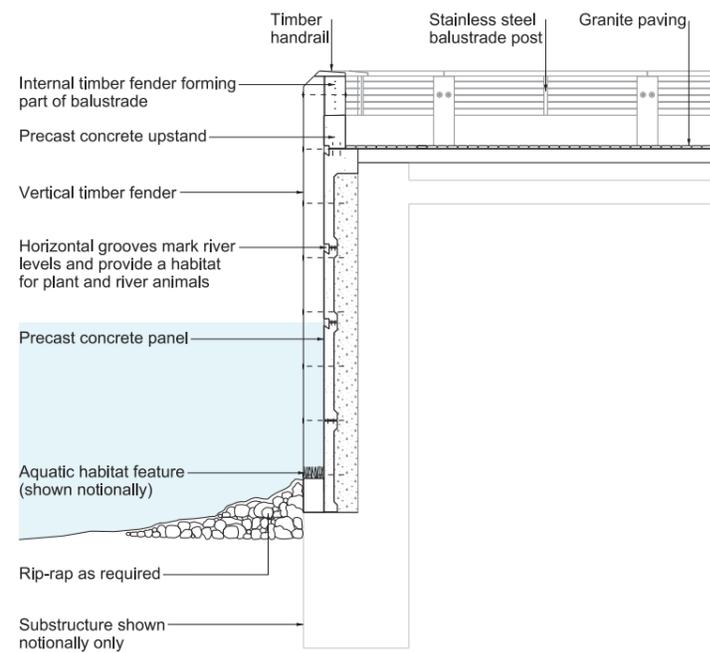
Thames Water

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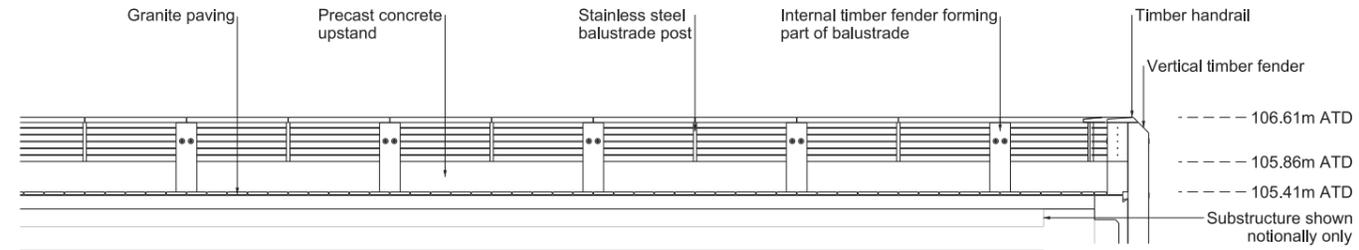
Isometric

Scale NTS



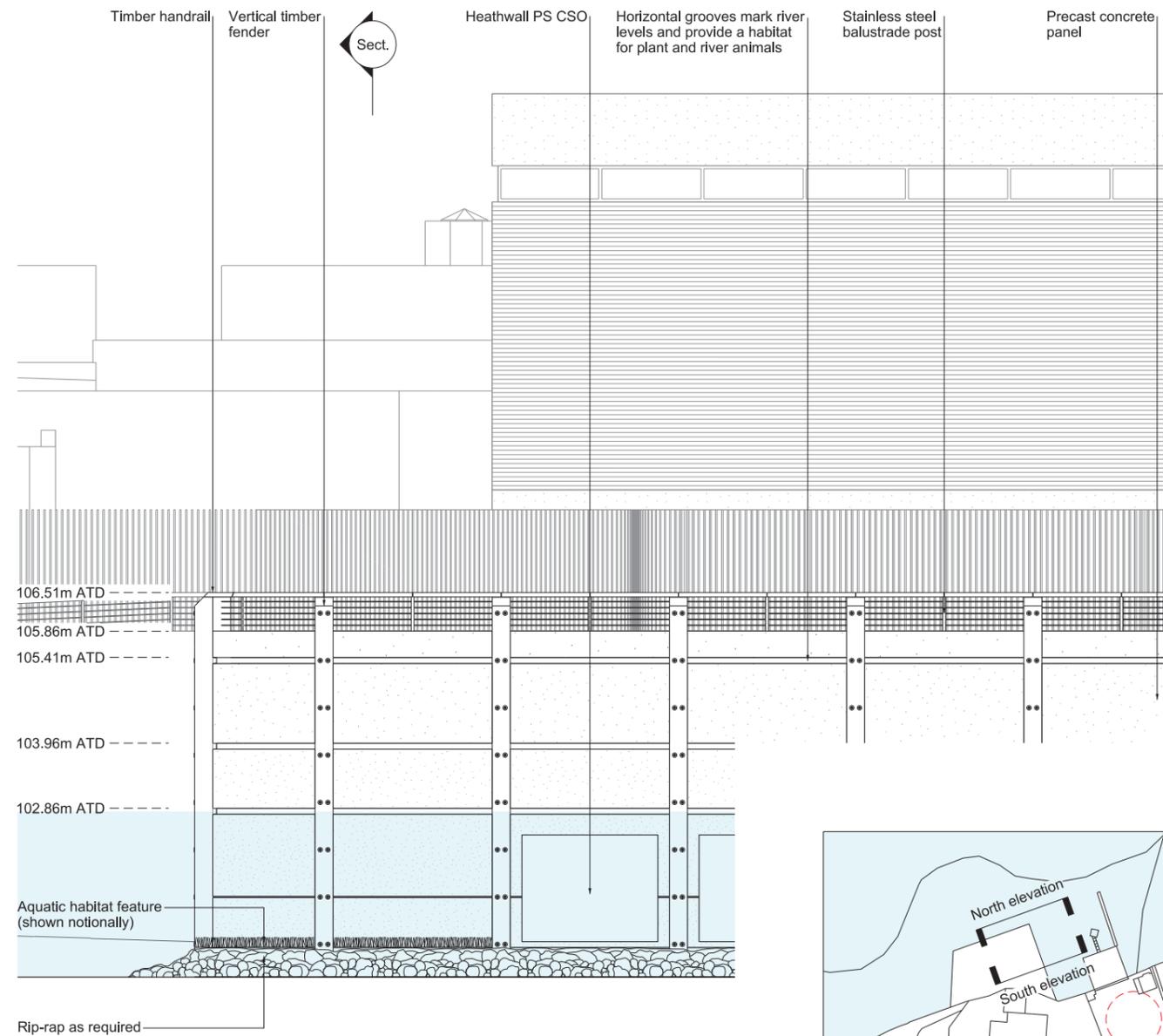
Detail section

Scale 1:50



South elevation

Scale 1:50



North elevation

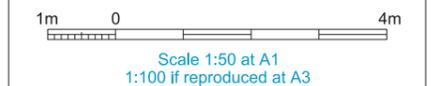
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Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Notes:

1. All dimensions and levels are approximate.



INDICATIVE

Location
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London Borough of Wandsworth

Document Information
Application for Development Consent
Typical river wall design intent

Book of plans - section 16
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January 2013

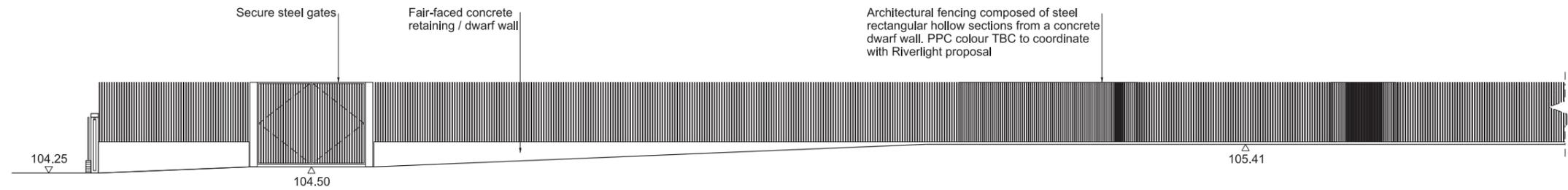




Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

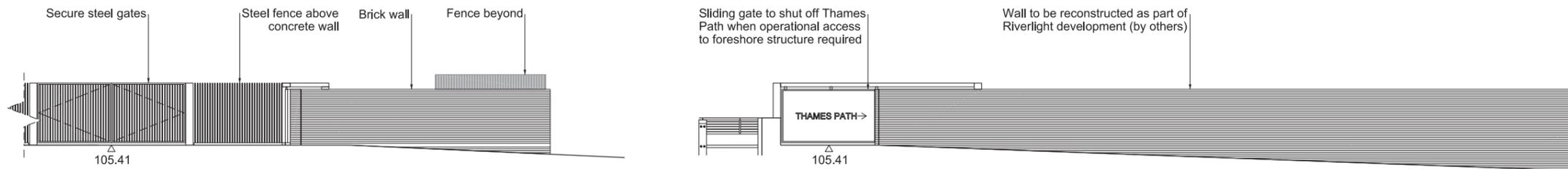
Notes:

1. All dimensions and levels are approximate.



North elevation (behind foreshore) 1 of 2

Scale 1:100

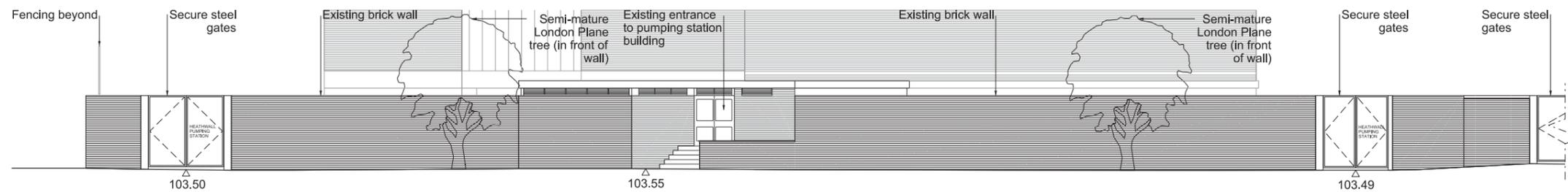


North elevation (behind foreshore) 2 of 2

Scale 1:100

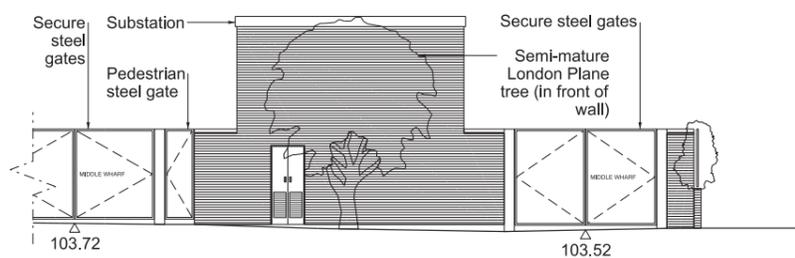
West elevation

Scale 1:100



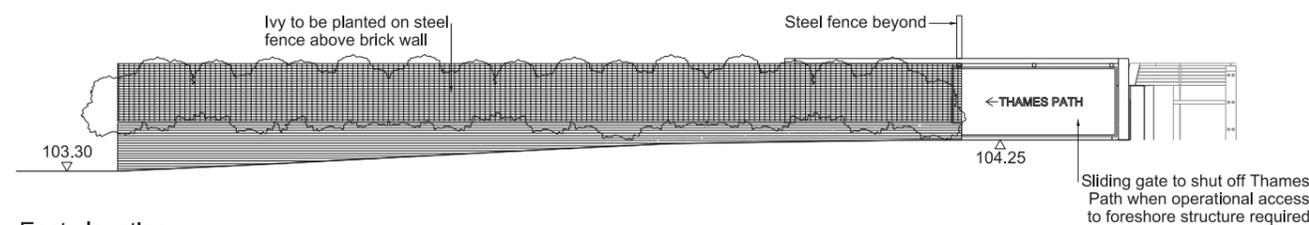
South elevation 1 of 2

Scale 1:100



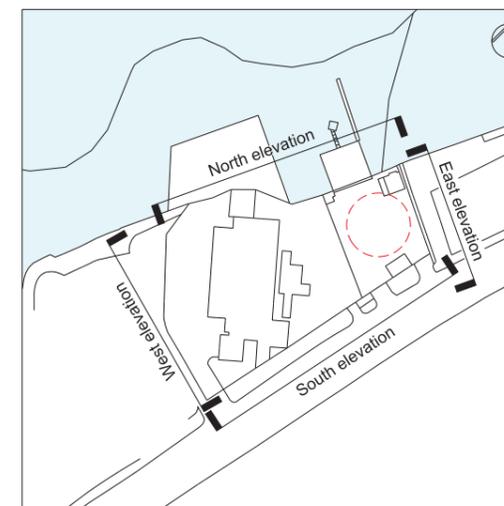
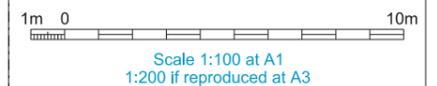
South elevation 2 of 2

Scale 1:100



East elevation

Scale 1:100



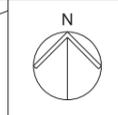
INDICATIVE

Location
Heathwall Pumping Station
London Borough of Wandsworth

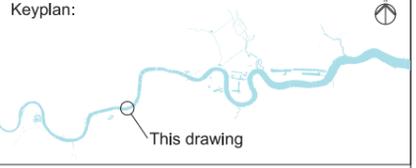
Document Information
Application for Development Consent
Fencing and gate design intent

Book of plans - section 16
DCO-PP-14X-HEAPS-160013
January 2013



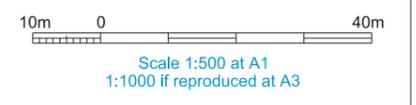
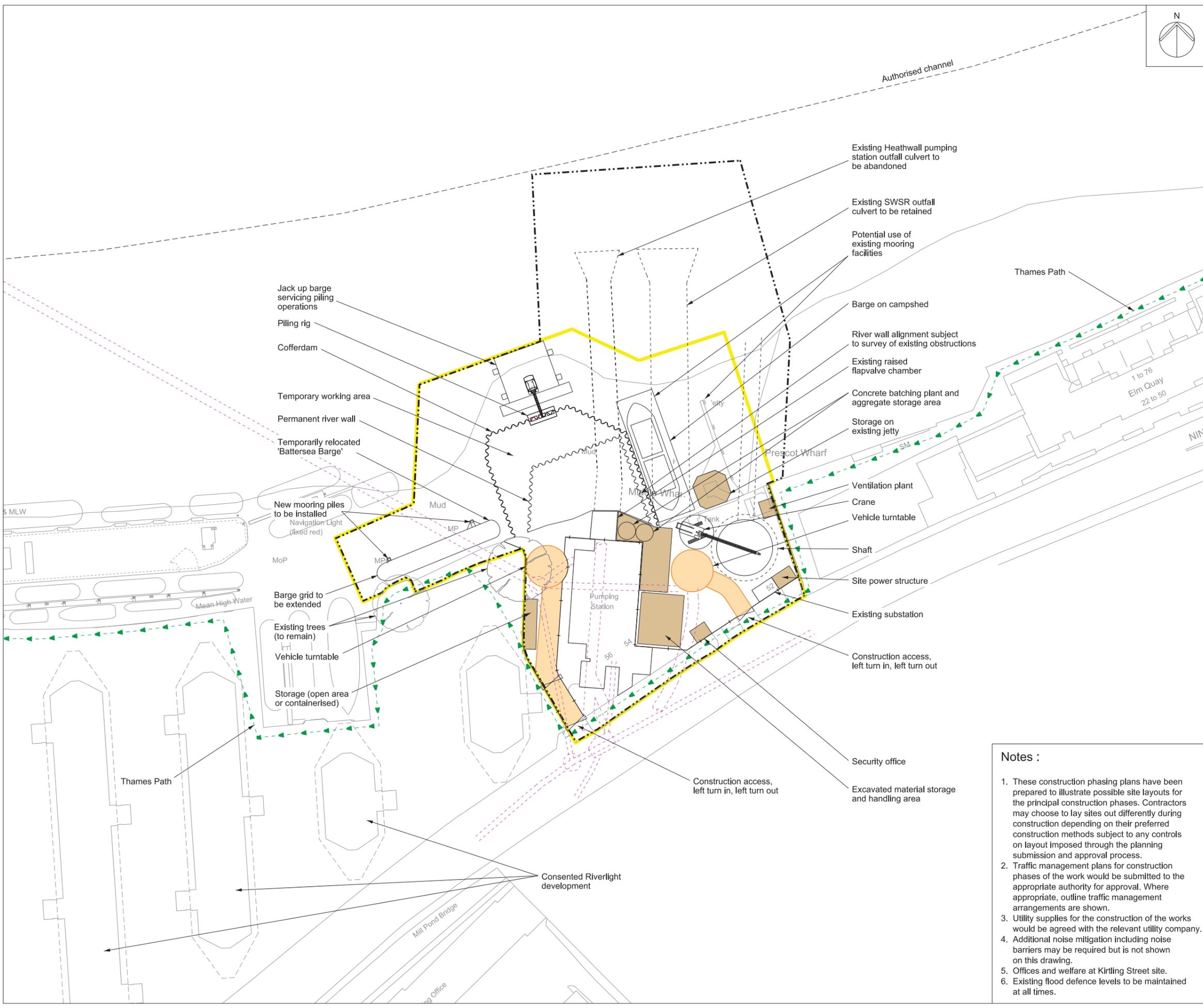


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- Key:
- Limits of land to be acquired or used (LLAU)
 - Hoarding
 - Maximum extent of working area
 - Existing public right of way
 - Site access
 - Access / haul route
 - Existing sewers
 - Sheet piles



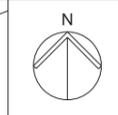
- Notes :
1. These construction phasing plans have been prepared to illustrate possible site layouts for the principal construction phases. Contractors may choose to lay sites out differently during construction depending on their preferred construction methods subject to any controls on layout imposed through the planning submission and approval process.
 2. Traffic management plans for construction phases of the work would be submitted to the appropriate authority for approval. Where appropriate, outline traffic management arrangements are shown.
 3. Utility supplies for the construction of the works would be agreed with the relevant utility company.
 4. Additional noise mitigation including noise barriers may be required but is not shown on this drawing.
 5. Offices and welfare at Kirtling Street site.
 6. Existing flood defence levels to be maintained at all times.

ILLUSTRATIVE

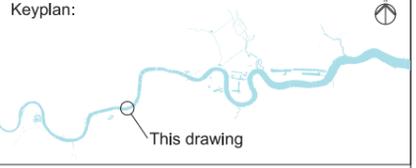
Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Application for Development Consent
Construction phases - phase 1
Site setup shaft construction & tunnelling
Book of plans - section 16
DCO-PP-14X-HEAPS-160014
January 2013



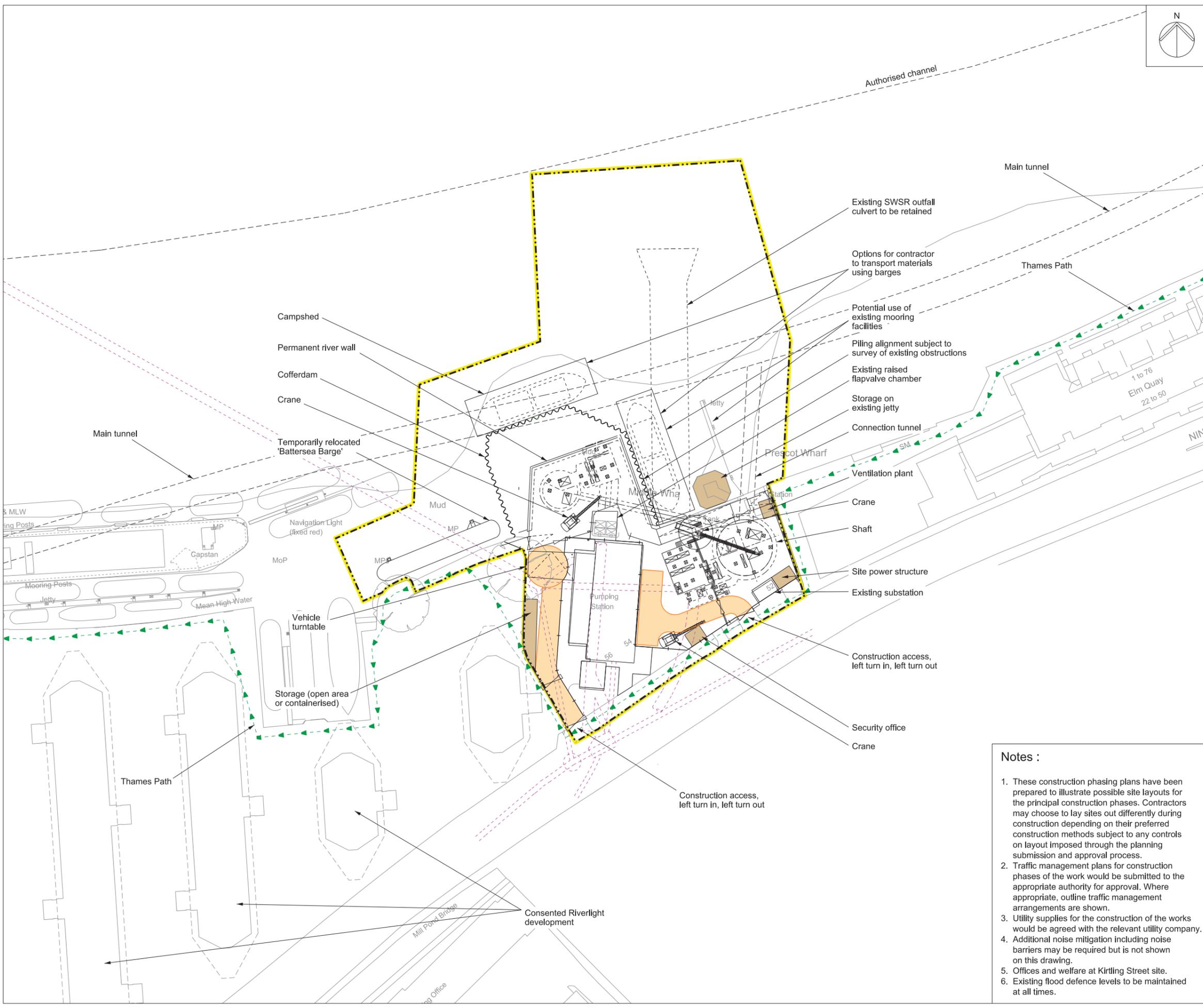


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- Key:
- Limits of land to be acquired or used (LLAU)
 - Hoarding
 - Maximum extent of working area
 - Existing public right of way
 - Site access
 - Access / haul route
 - Existing sewers
 - Sheet piles



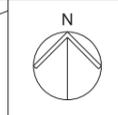
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ILLUSTRATIVE

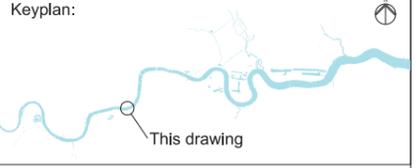
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Application for Development Consent
 Construction phases - phase 2
 Construction of other structures
 Book of plans - section 16
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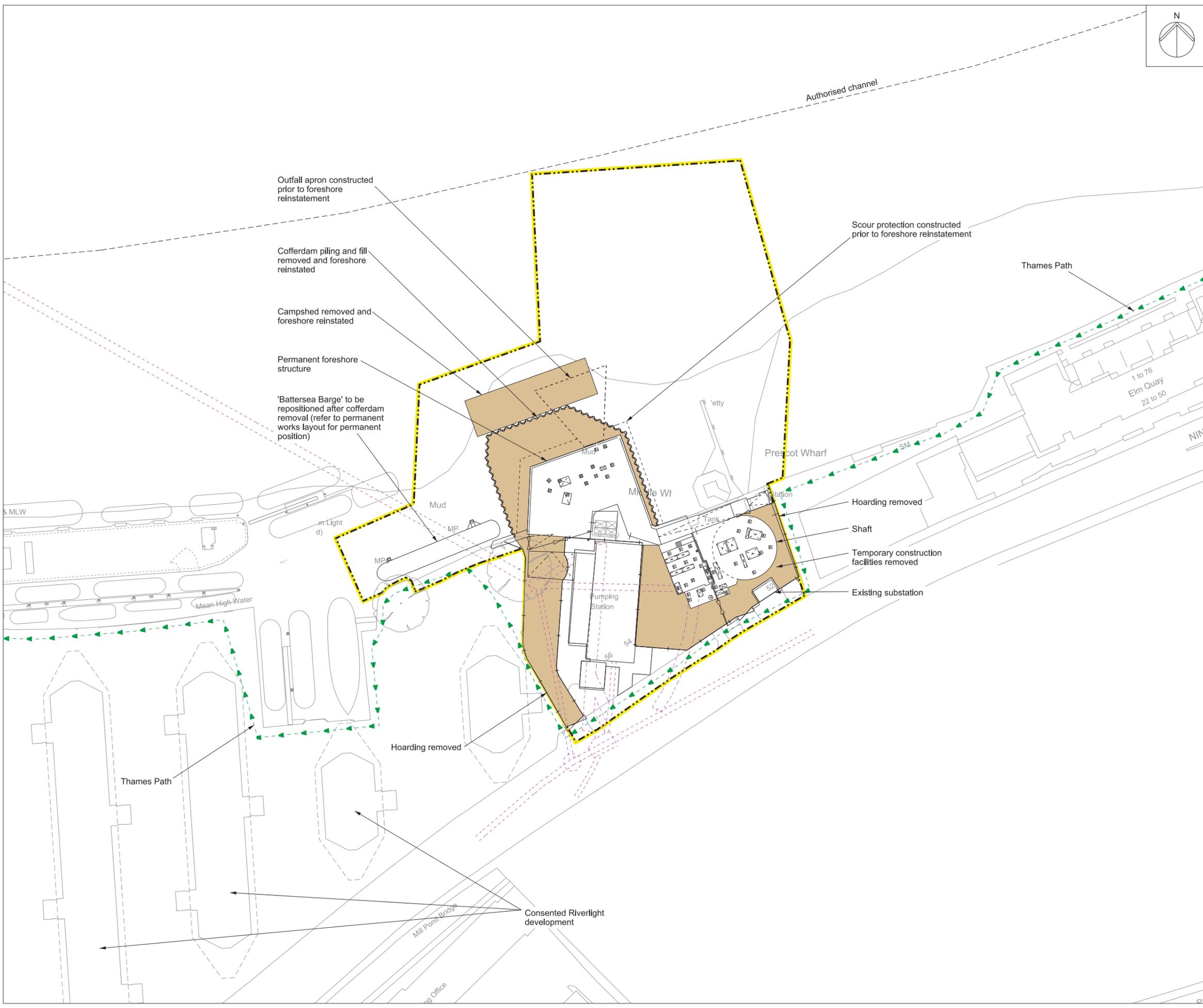
- Key:**
- Limits of land to be acquired or used (LLAU)
 - Hoarding
 - Maximum extent of working area
 - Existing public right of way
 - Site access
 - Existing sewers
 - Sheet piles



ILLUSTRATIVE

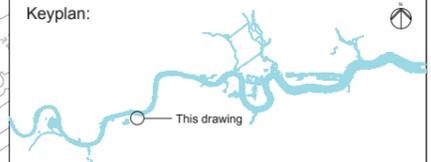
Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Application for Development Consent
Construction phases - phase 3
Site demobilisation
Book of plans - section 16
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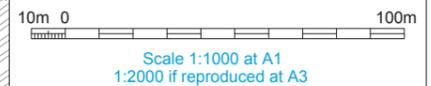


Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key**
- Existing
 - Red route parking restrictions
 - Bus lanes
 - Bus stop / stand
 - Pedestrian crossing
 - Cycle lane / advance stop line
- Revised
- Limit of land to be acquired or used (LLAU)

Stage
Existing

- Standards**
- Design Manual for Roads and Bridges, Dft, 1992
 - Traffic Signs Regulations & General Directions, Tso, 2002
 - Traffic Signs Manual, Dft, 2006
 - Manual for Streets, Dft, 2007
 - Manual for Streets 2, CIHT, 2010
 - Designing for Deliveries, Fta, 1998
 - Cycle Infrastructure Design Ltn 2/08, Dft, 2008
 - Design of Pedestrian Crossings Ltn 2/95, Dft, 1995
 - Guidance on the use of Tactile Paving Surfaces, Dft, 1998
 - Accessible Bus Stop Design Guidance, TfL, 2006



FOR INFORMATION

Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Application for Development Consent
Existing highway layout

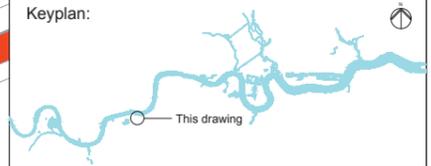
DCO-PP-14X-HEAPS-160019
January 2013



Construction base case highway layout



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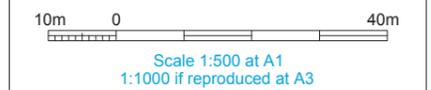
Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

Key	
Existing	
	Red route parking restrictions
	Bus lane
	Pedestrian crossing
	Cycle lane / advance stop line
Revised	
	Removal of footway
	Suspended cycle facility
	Illustrative on-site manoeuvring zone
	Visibility splay - 2.4m x 43m (ssd adjust for bonnet length)
	Site hut
	Site hoarding
	Access gate
	Limit of land to be acquired or used (LLAU)
	PWH10_C00 See schedule of works

Stage
Phase 1

- Standards**
- Design Manual for Roads and Bridges, DfT, 1992
 - Traffic Signs Regulations & General Directions, Tso, 2002
 - Traffic Signs Manual, DfT, 2006
 - Manual for Streets, DfT, 2007
 - Manual for Streets 2, CIHT, 2010
 - Designing for Deliveries, Fta, 1998
 - Cycle Infrastructure Design Ltn 2/08, DfT, 2008
 - Design of Pedestrian Crossings Ltn 2/95, DfT, 1995
 - Guidance on the use of Tactile Paving Surfaces, DfT, 1998
 - Accessible Bus Stop Design Guidance, TfL, 2006

Highway layout during construction



ILLUSTRATIVE

Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Application for Development Consent
Highway layout during construction
(Area 1) Ph 1

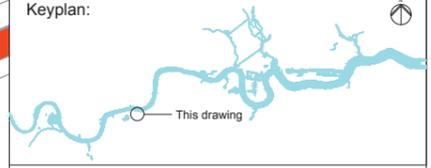
DCO-PP-14X-HEAPS-160020
January 2013



Construction base case highway layout



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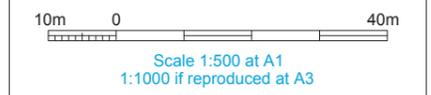
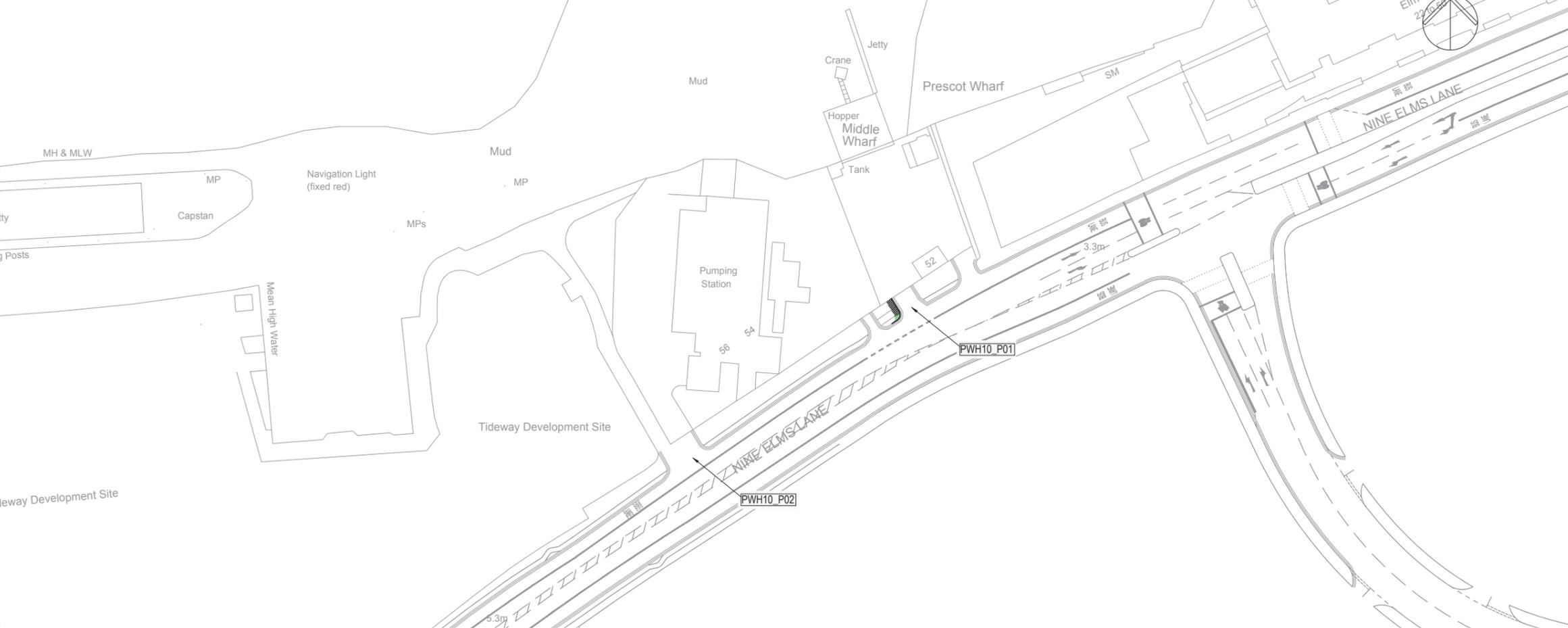
Coordinates are to be Ordnance Survey Datum OSGB36. All levels are in metres and relate to the Tunnel Datum which is 100 metres below Ordnance Datum Newlyn.

- Key**
- Existing**
- Red route parking restrictions
 - Bus lane
 - Pedestrian crossing
 - Cycle lane / advance stop line
- Revised**
- Reinstated footway
 - Reinstated cycle facility
- PWH10_P00 See schedule of works

Stage
Permanent phase

- Standards**
- Design Manual for Roads and Bridges, Dft, 1992
 - Traffic Signs Regulations & General Directions, Tso, 2002
 - Traffic Signs Manual, Dft, 2006
 - Manual for Streets, Dft, 2007
 - Manual for Streets 2, CIHT, 2010
 - Designing for Deliveries, Fta, 1998
 - Cycle Infrastructure Design Ltn 2/08, Dft, 2008
 - Design of Pedestrian Crossings Ltn 2/95, Dft, 1995
 - Guidance on the use of Tactile Paving Surfaces, Dft, 1998
 - Accessible Bus Stop Design Guidance, TfL, 2006

Permanent highway layout



ILLUSTRATIVE

Location
Heathwall Pumping Station
London Borough of Wandsworth

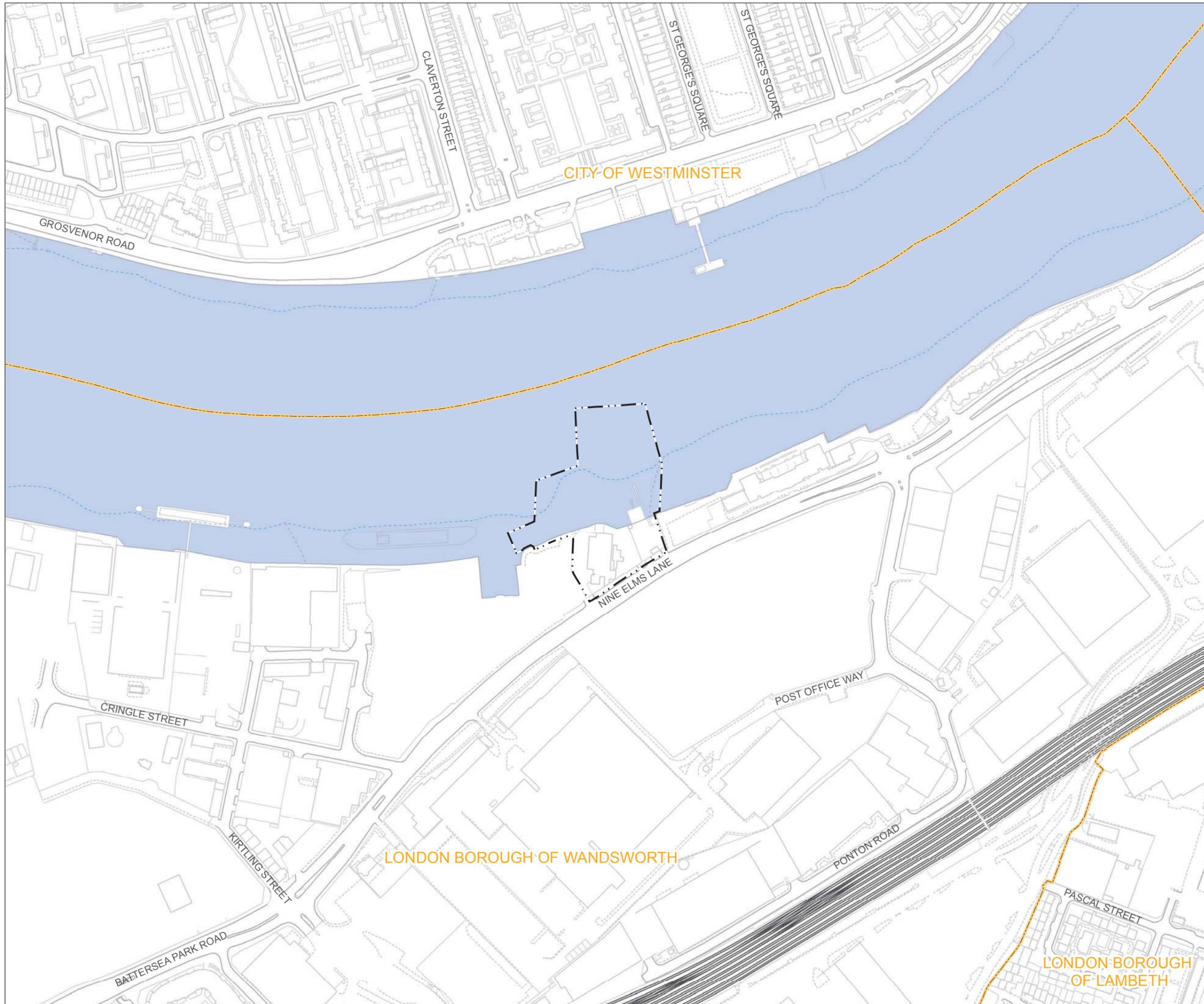
Document Information
Application for Development Consent
Permanent highway layout - Area 1 Work

DCO-PP-14X-HEAPS-160021
January 2013



2 Environmental impact assessment figures

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- Key
- Limits of Land to be Acquired or Used
 - Local Authority Boundary
 - River Thames



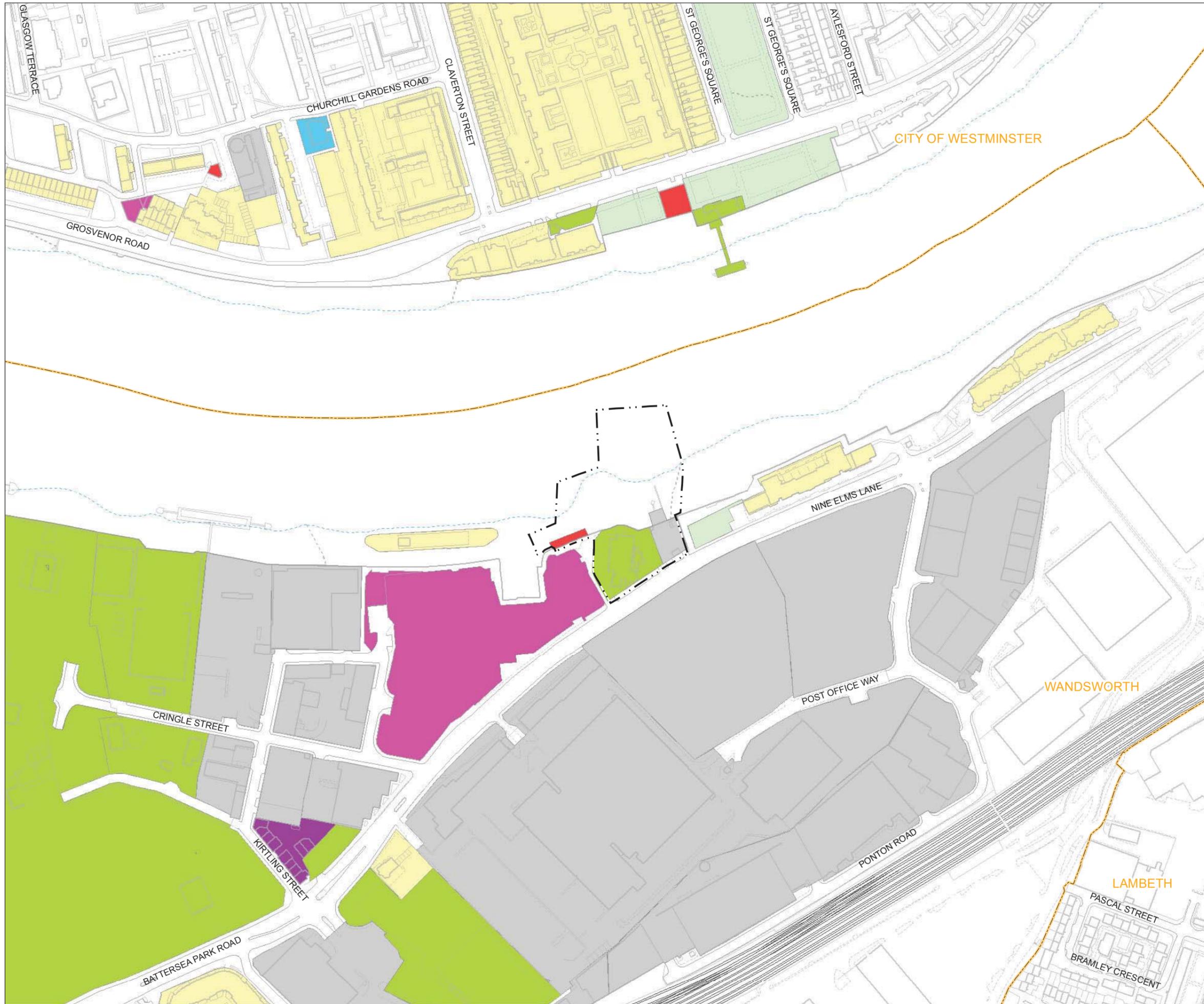
FOR INFORMATION

Location
King Edward Memorial Park Foreshore
 London Borough of Wandsworth

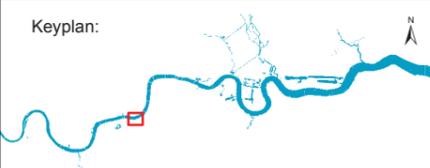
Document Information
Environmental Statement
 Site location plan
 Vol. 15 Figure 2.1.1

1PL03-MG-00708
 January 2013





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- Key**
- Limits of Land to be Acquired or Used
 - Local Authority Boundary
- Land Use**
- Class A1-A5 (Shops, Financial & Professional Services, Restaurants, Drinking Establishments and Hot Food Takeaways)
 - Class B1 (Business (Offices except A2) Research and Development, Light Industry)
 - Class B2-B8 (General Industrial / Storage or Distribution)
 - Class C3-C4 (Dwelling Houses)
 - Class D1-D2 (Non Residential Institutions (Community Facilities) and Assembly and Leisure)
 - Mixed Use
 - Other
 - Open Space



FOR INFORMATION

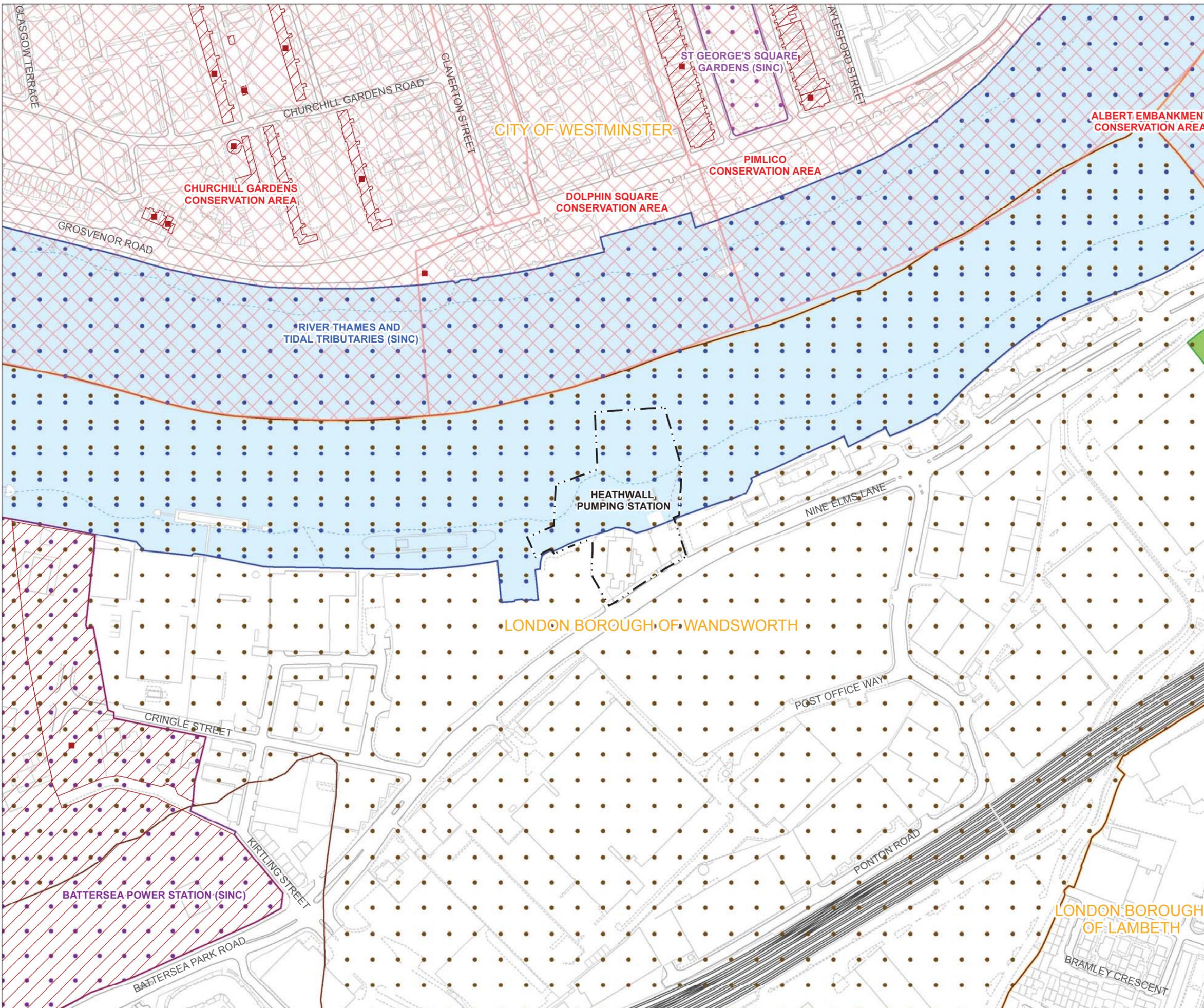
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Land use
 Vol. 15 Figure 2.1.2

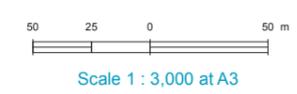
1PL03-MG-00760
 January 2013



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- Key**
- Listed Building Point
 - Limits of Land to be Acquired or Used
 - ▨ Listed Building Area
 - ▧ LPA Conservation Area
 - Tree Preservation Order Area
 - LPA Archaeological Area
 - ▭ Local Authority Boundary
 - River Thames
- Sites of Importance for Nature Conservation (SINC)**
- ▭ Metropolitan Importance
 - ▭ Borough Importance
 - ▭ Local Importance



FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Environmental setting
 Vol. 15 Figure 2.1.3

1PL03-MG-00689
 January 2013

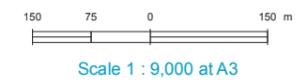
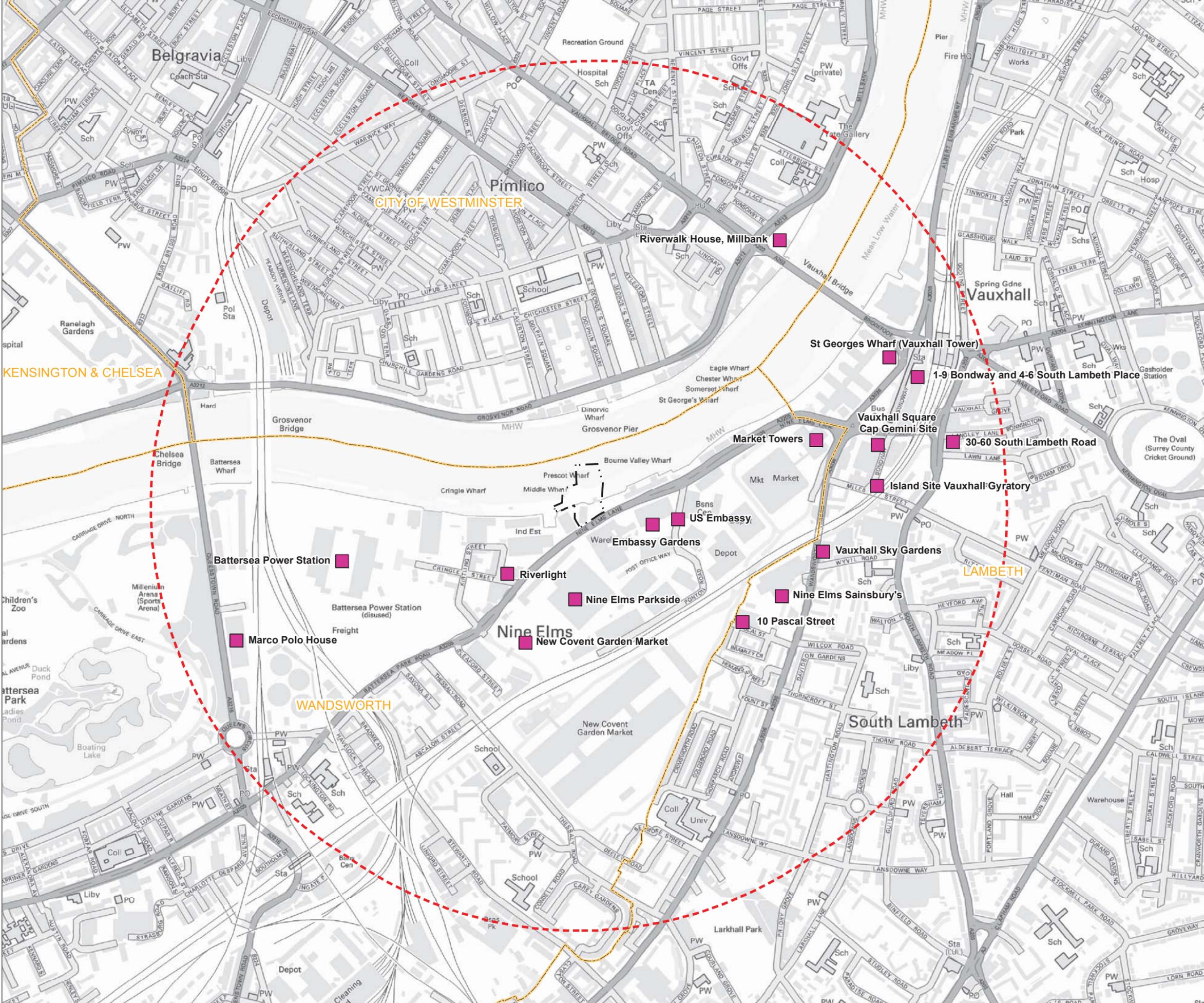


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- Key**
- Planning Application
 - Limits of Land to be Acquired or Used
 - Planning Application (1km Boundary)
 - Local Authority Boundary

Note: This plan does not show the full extent for each planning application, but a single point within the application site.



FOR INFORMATION

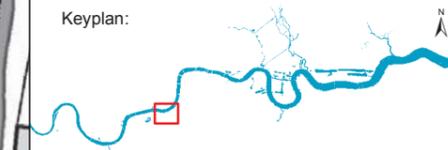
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Base case and cumulative development projects
 Vol.15 Figure 3.5.1
 1PL03-MG-00731
 January 2013



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Keyplan:



Key

- Limits of Land to be Acquired or Used
- Existing Local Authority Continuous Monitors
- Existing Local Authority Diffusion Tubes
- New Diffusion Tubes (Project)

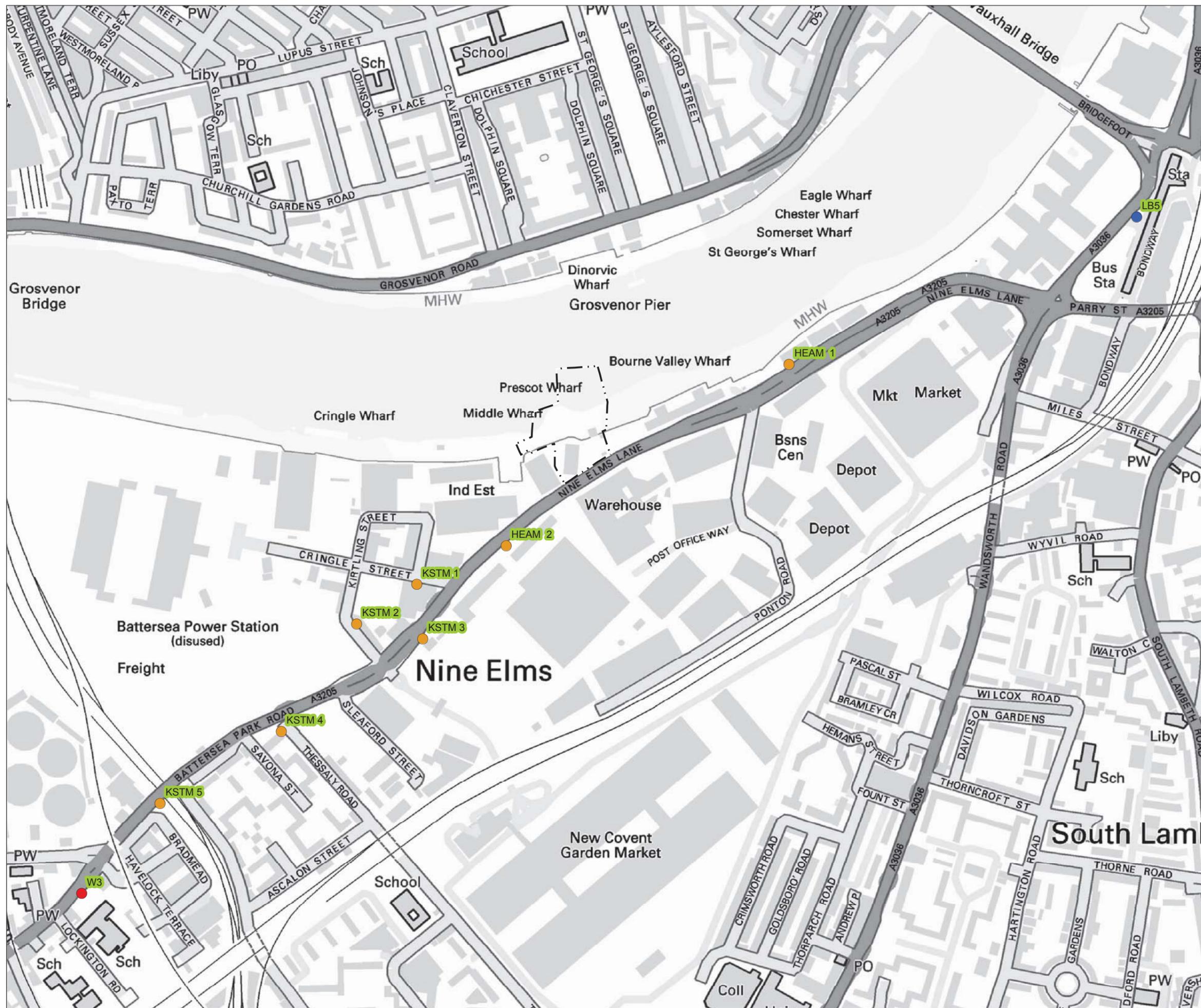


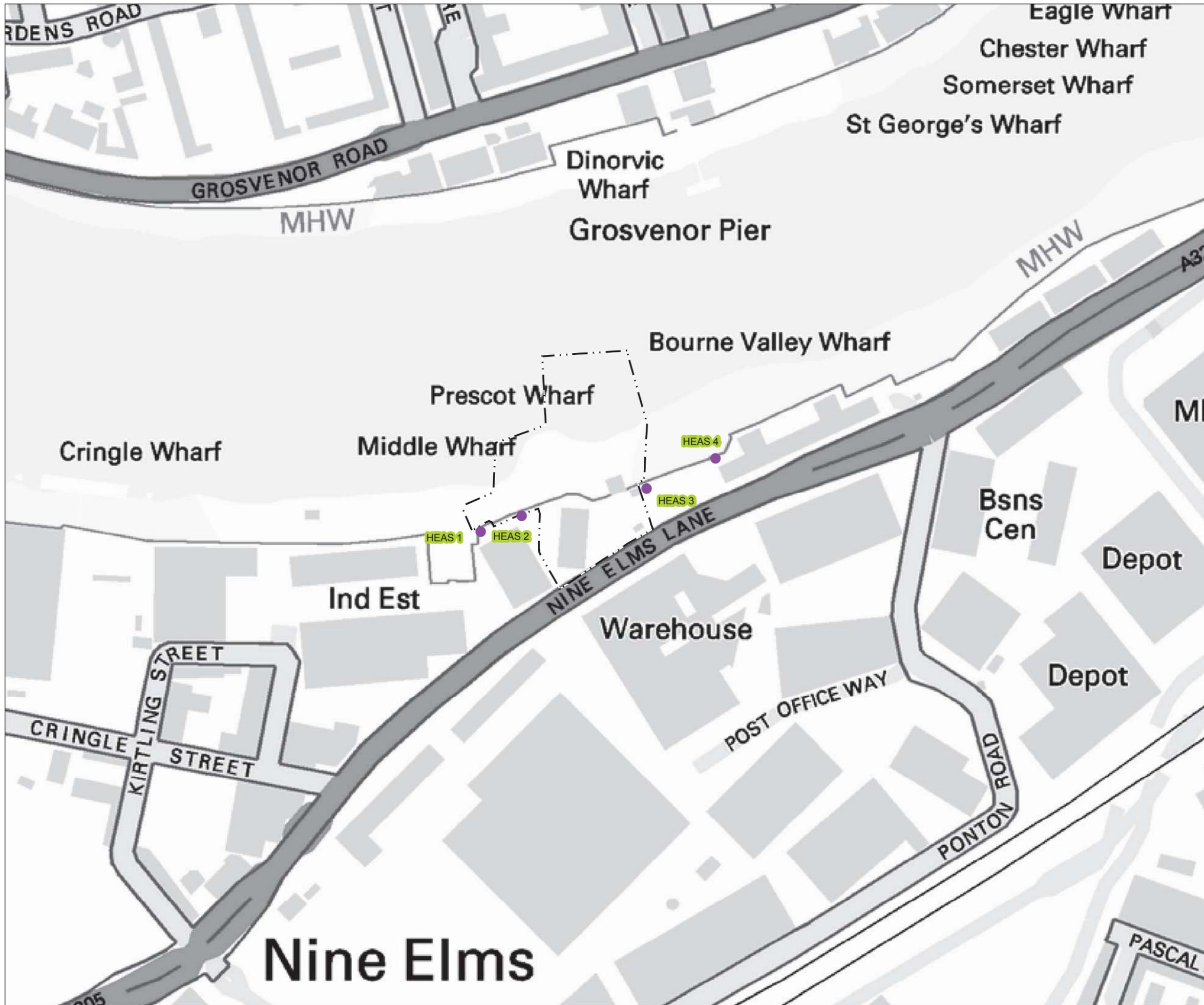
Scale 1 : 5,000 at A3

FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - air quality monitoring sites
 Vol.15 Figure 4.4.1
 1PL03-AQ-10915
 January 2013





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Key

- Limits of Land to be Acquired or Used
- H₂S Monitoring Locations

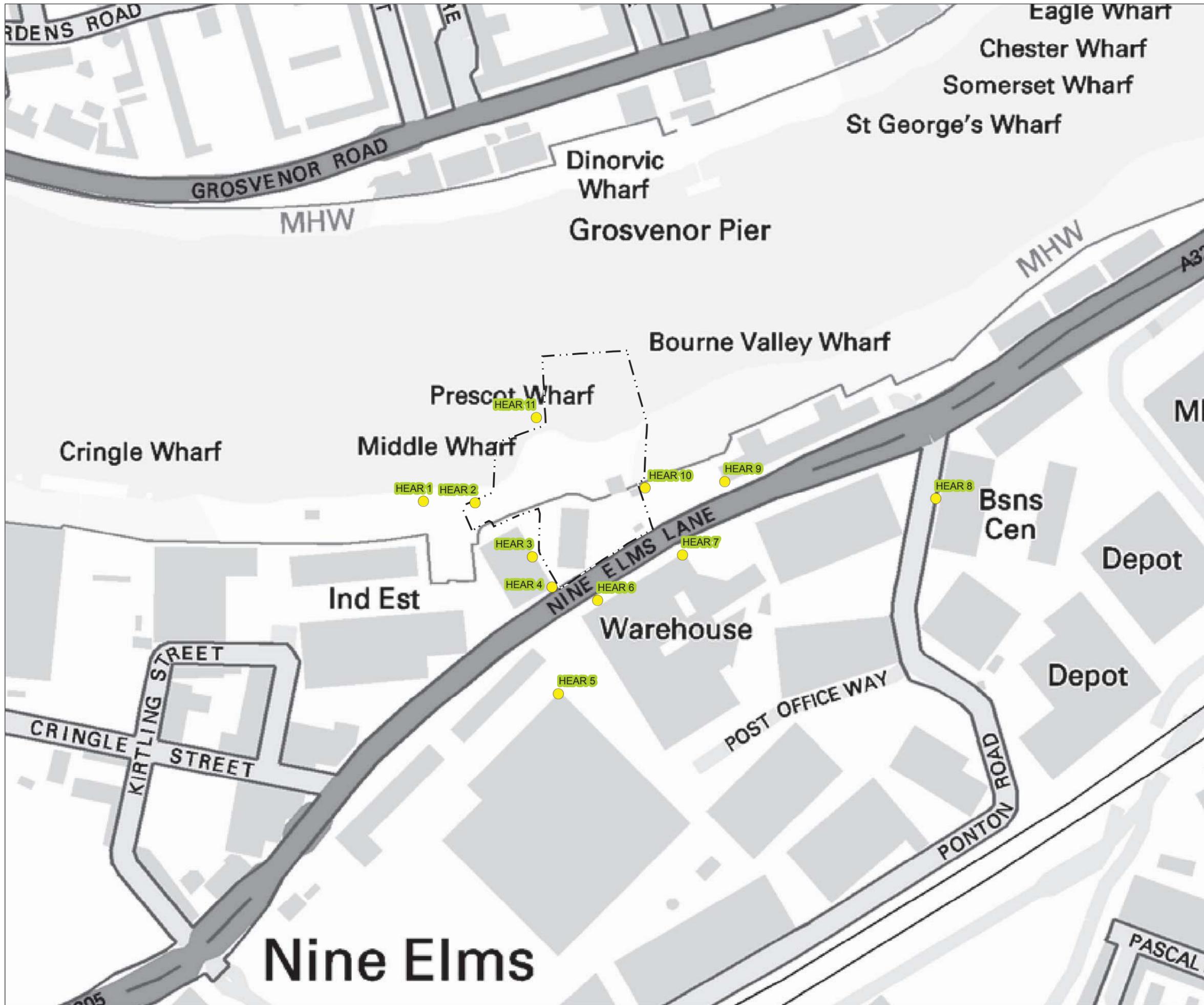


FOR INFORMATION

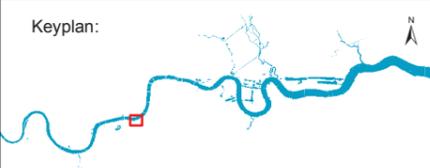
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - H₂S monitoring locations
 Vol.15 Figure 4.4.2
 1PL03-AQ-10916
 January 2013





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Key

- Limits of Land to be Acquired or Used
- Modelled Receptors

Note: The receptors are selected on the basis that they are representative of sensitive land uses closest to the site.

- HEAR 1 - Nine Elms Pier, House Boats
- HEAR 2 - Battersea Barge
- HEAR 3 - Riverlight (Proposed)
- HEAR 4 - Fedex, Nine Elms Lane
- HEAR 5 - Nine Elms Parkside (Proposed)
- HEAR 6 - Embassy Gardens (Proposed)
- HEAR 7 - Offices, Nine Elms Lane
- HEAR 8 - US Embassy (Proposed)
- HEAR 9 - Elm Quay Court, Nine Elms Lane
- HEAR 10 - Thames Path
- HEAR 11 - River Thames

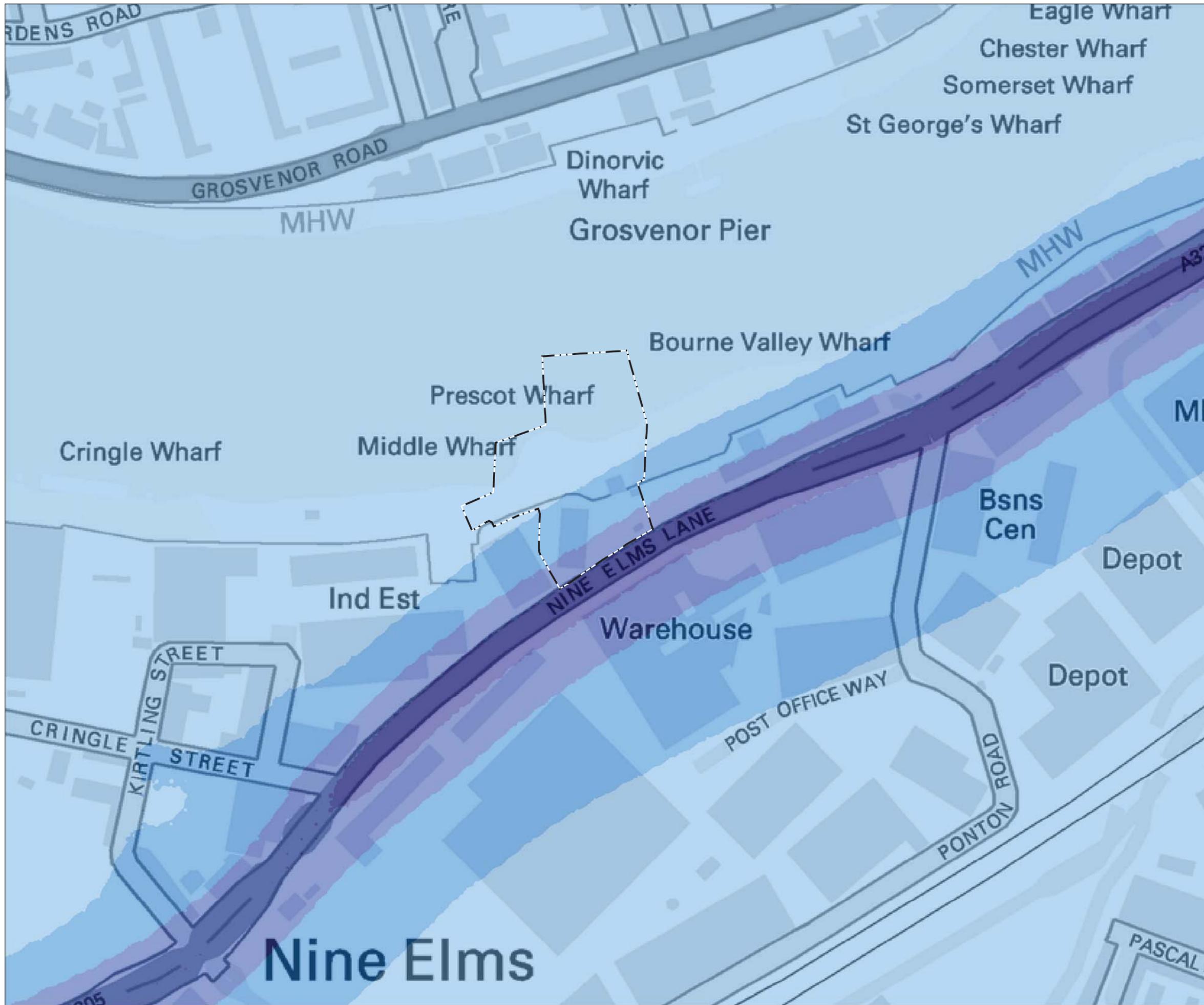


FOR INFORMATION

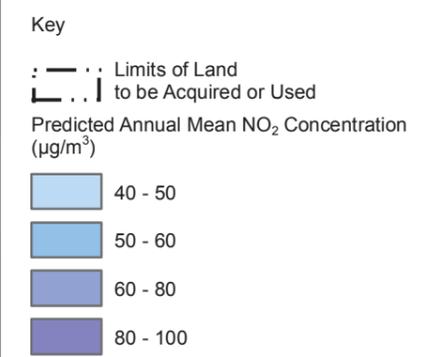
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - modelled air quality receptors
 Vol.15 Figure 4.4.3
 1PL03-AQ-10917
 January 2013





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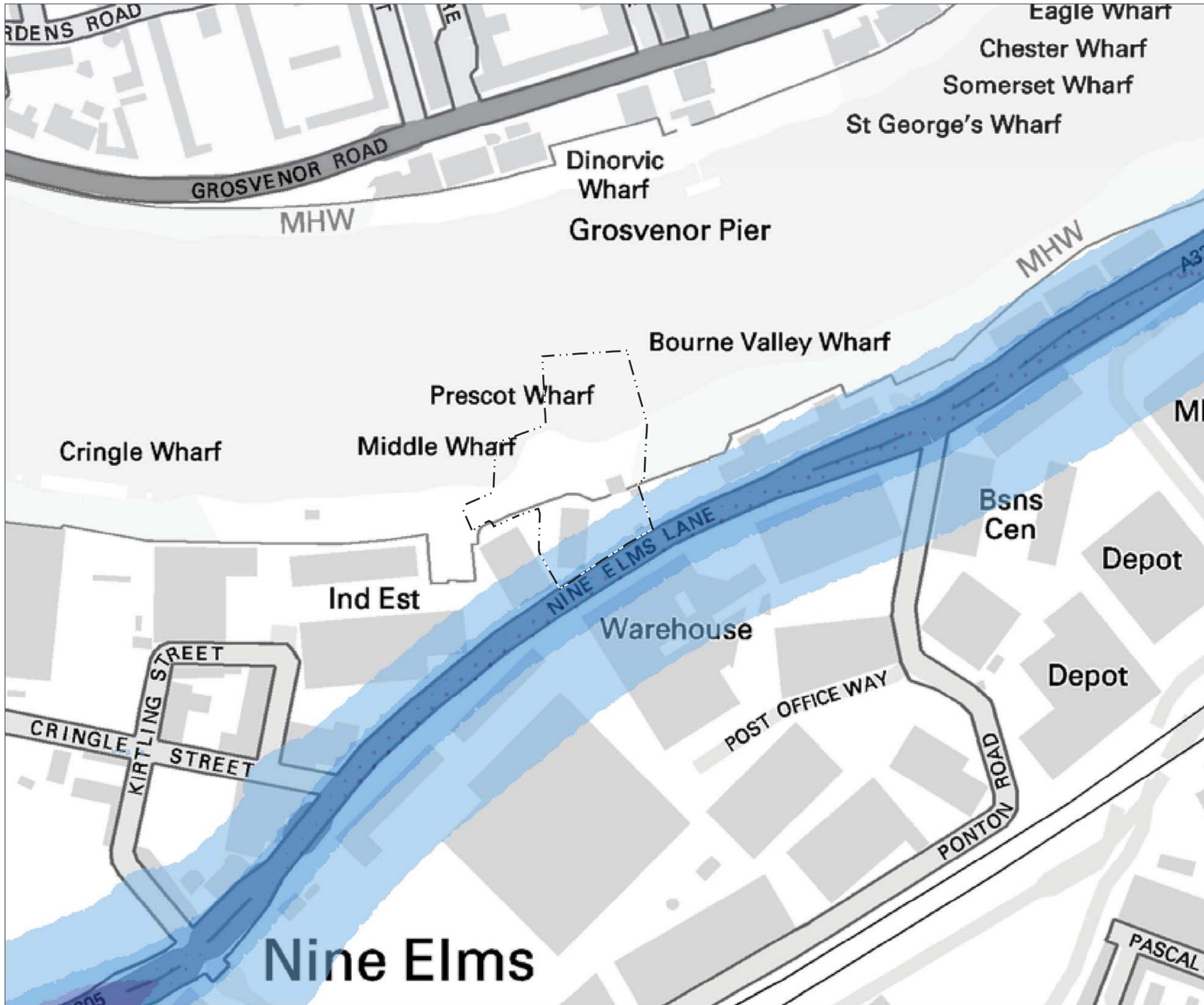


FOR INFORMATION

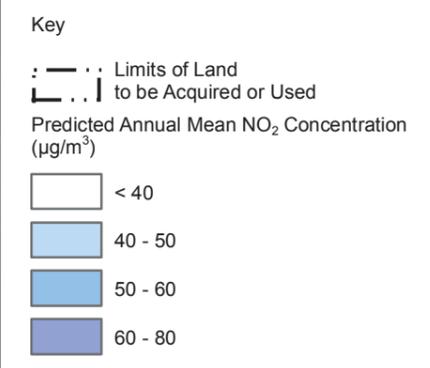
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean NO₂ for 2010 baseline
 Vol.15 Figure 4.5.1
 1PL03-AQ-10918
 January 2013





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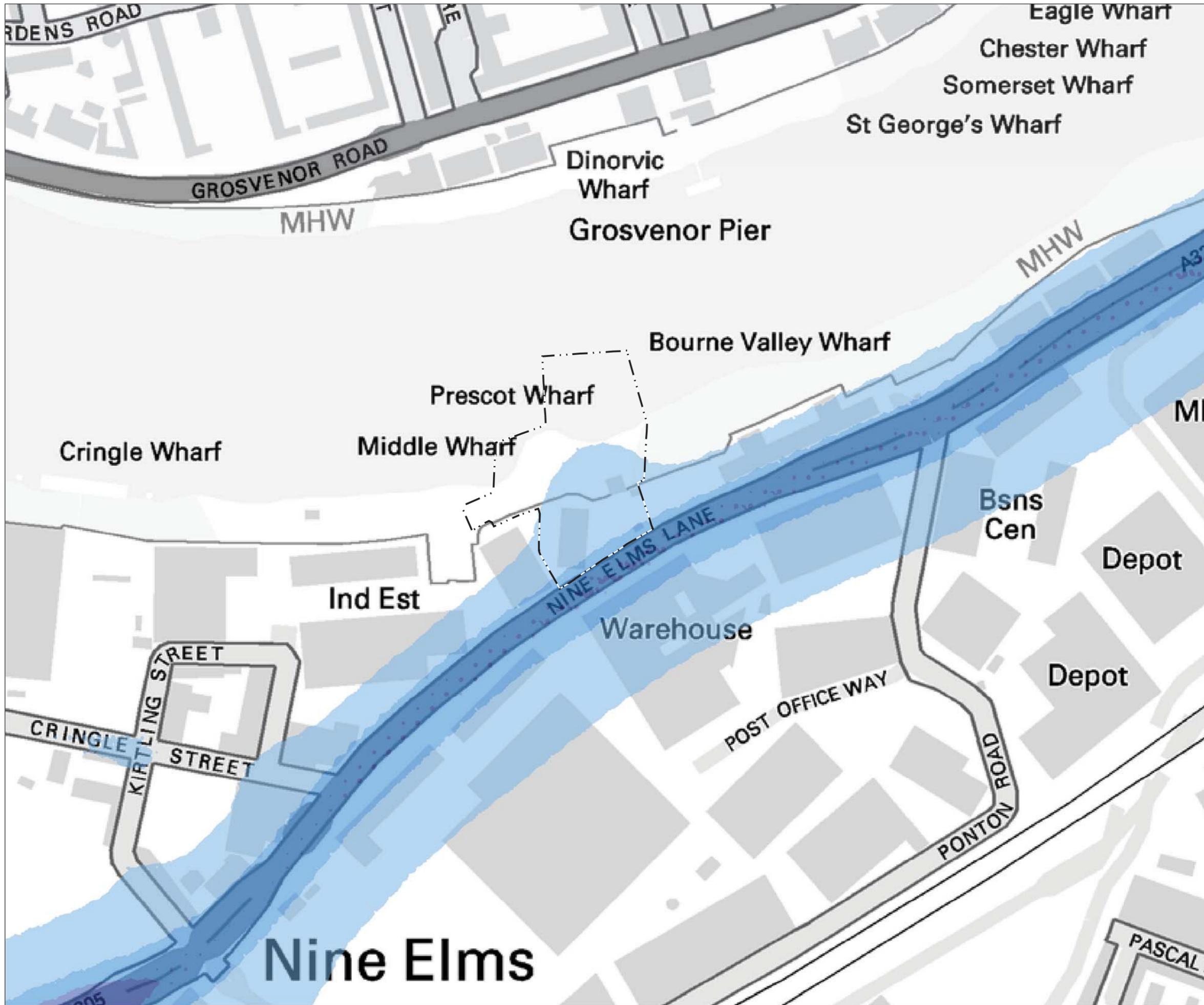


FOR INFORMATION

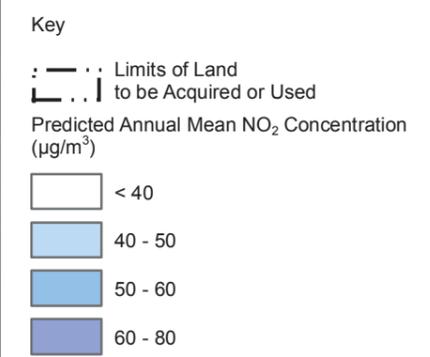
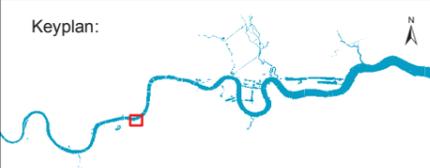
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean NO₂ for peak construction year base case
 Vol.15 Figure 4.5.2
 1PL03-AQ-10919
 January 2013





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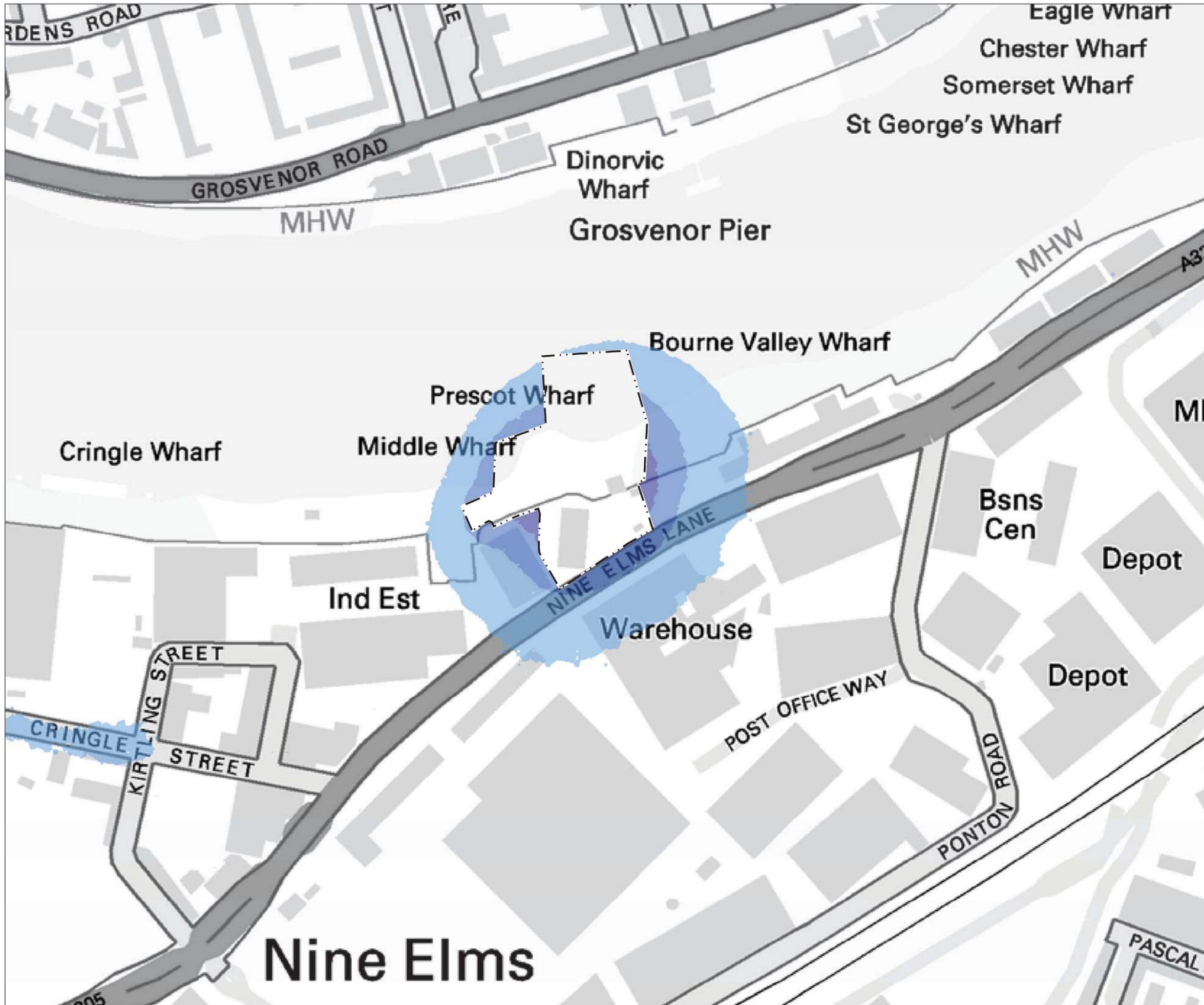


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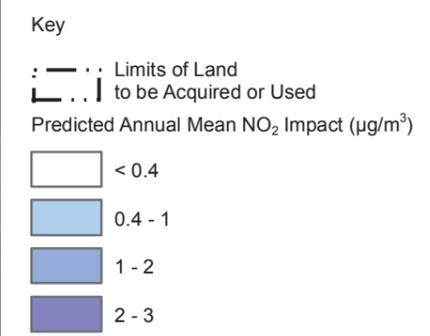
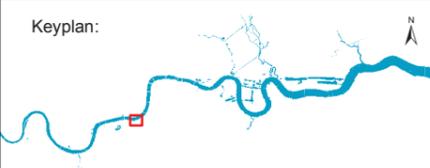
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean NO₂ for peak construction year development case Vol.15 Figure 4.5.3
 1PL03-AQ-10920
 January 2013





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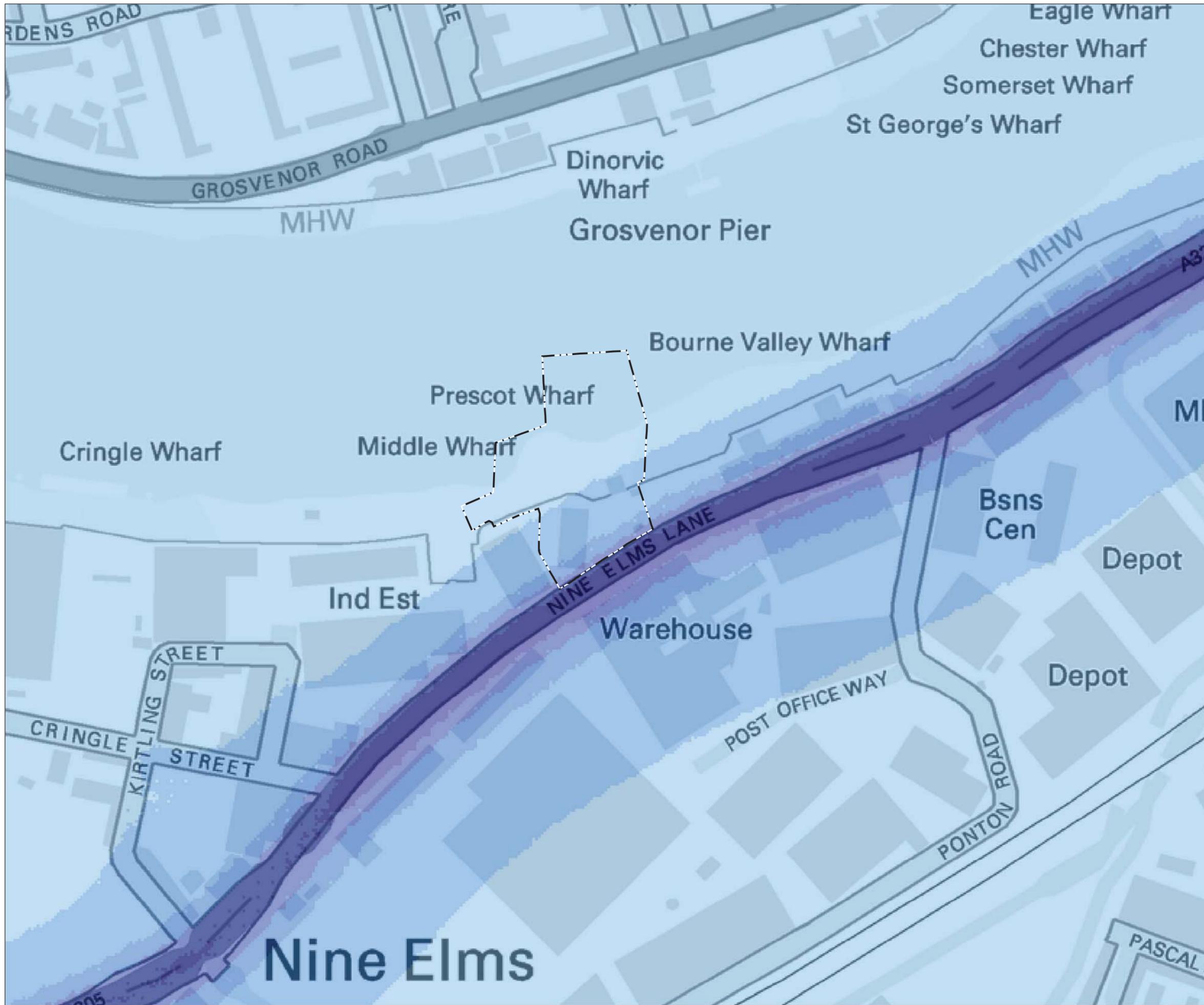


FOR INFORMATION

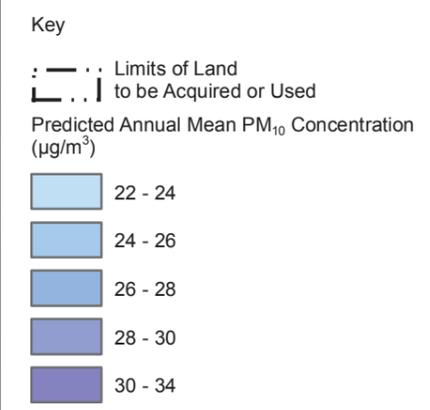
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean NO₂ impact for peak construction year
 Vol.15 Figure 4.5.4
 1PL03-AQ-10921
 January 2013





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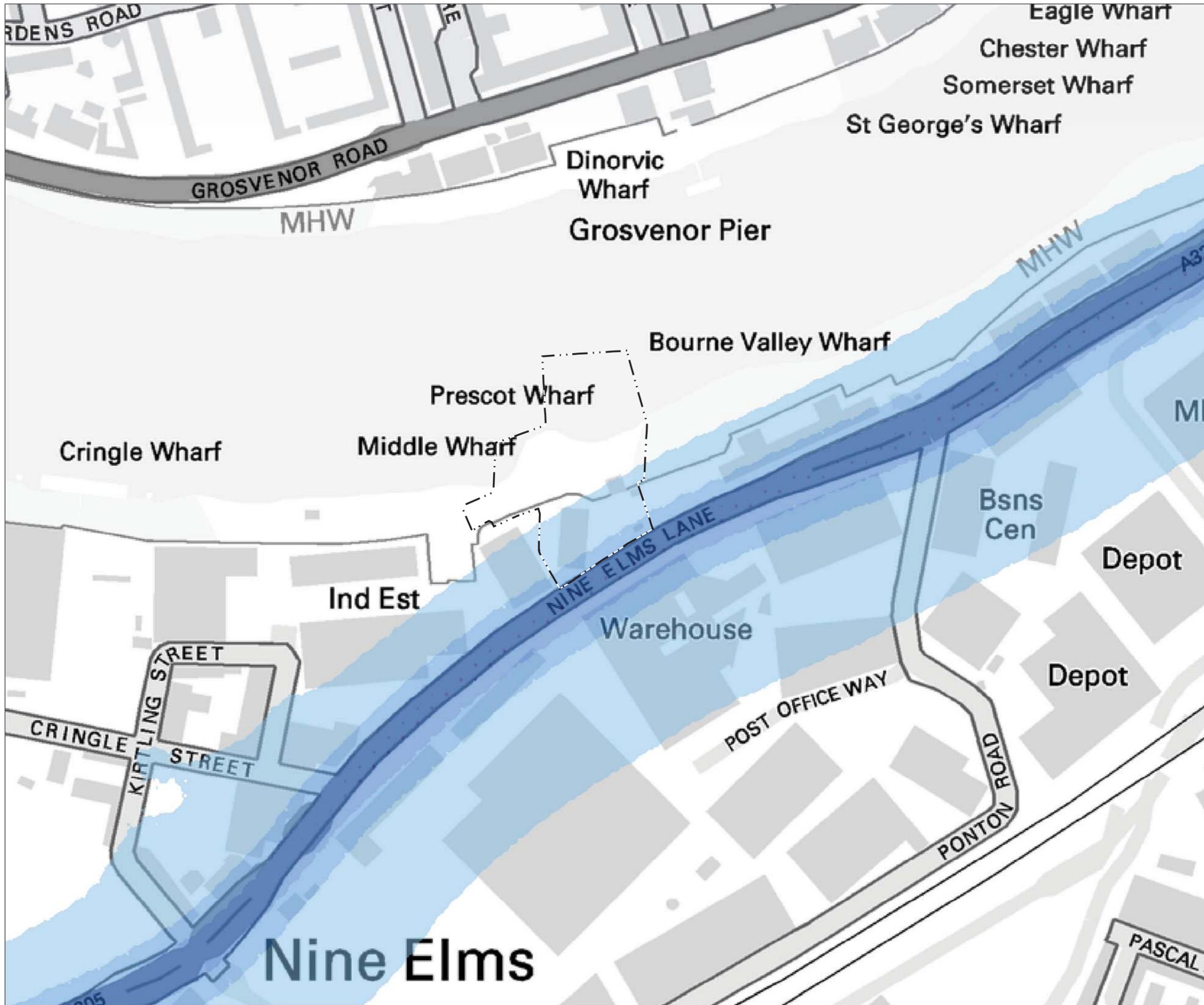


FOR INFORMATION

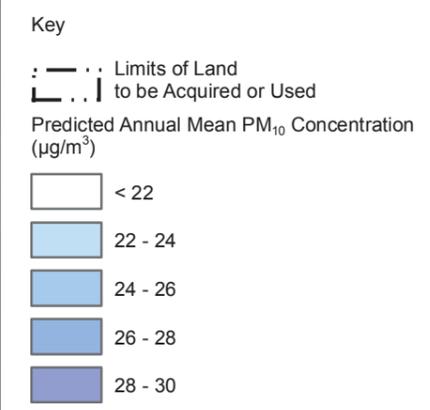
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean PM₁₀
 for 2010 baseline
 Vol.15 Figure 4.5.5
 1PL03-AQ-10922
 January 2013





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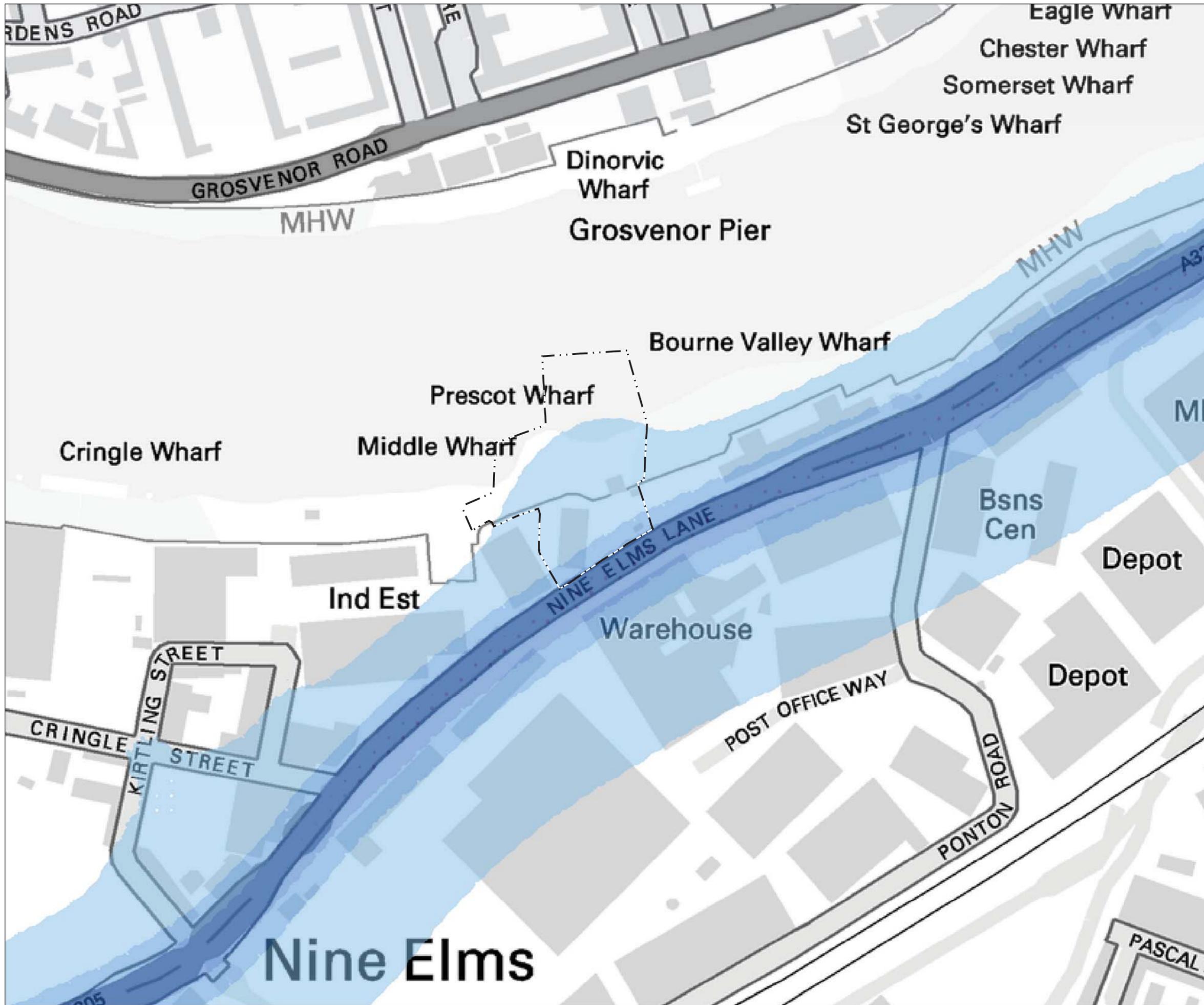


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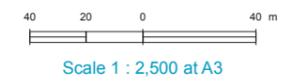
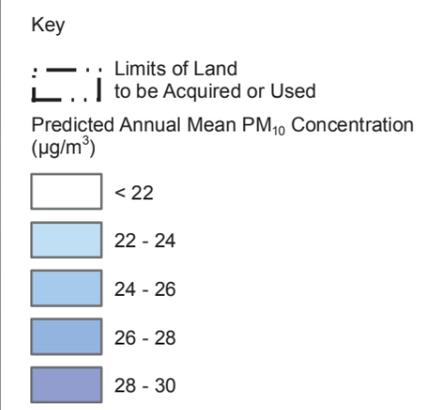
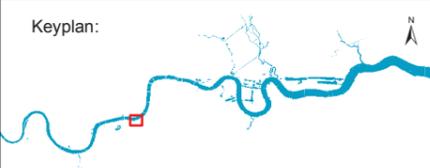
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean PM₁₀
 for peak construction year base case
 Vol.15 Figure 4.5.6
 1PL03-AQ-10923
 January 2013





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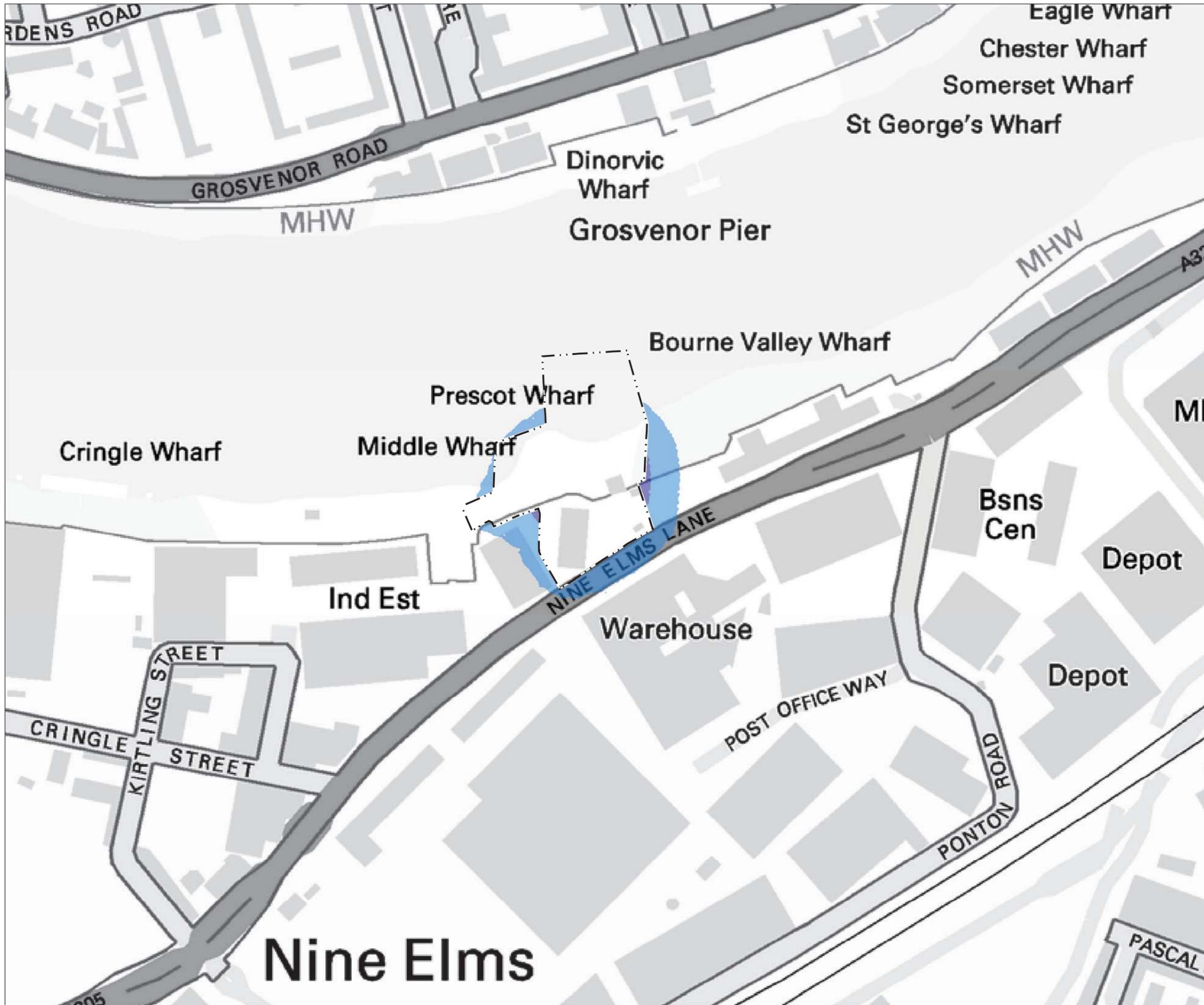


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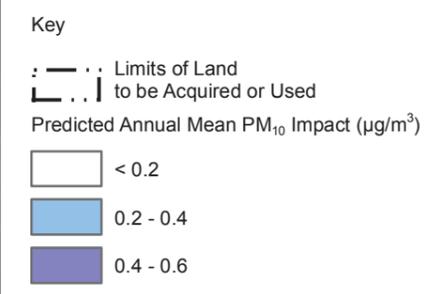
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean PM₁₀
 for peak construction year development case
 Vol.15 Figure 4.5.7
 1PL03-AQ-10924
 January 2013





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FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Air quality and odour - annual mean PM₁₀ impact for peak construction year
 Vol.15 Figure 4.5.8
 1PL03-AQ-10925
 January 2013



Keyplan:



Key

- Limits of Land to be Acquired or Used
- Sampling Area for Fish and Benthic Invertebrates
- Coordinates of Sampling Area
- Algae Survey Area
- CSO (Directly Controlled)
- River Wall
- Habitats**
- Pebbles Dominant and Cobbles
- Sand/Silt
- Stone
- Fish**
- Seine Netting
- Boat Fish Trawl
- Invertebrates**
- Airlift
- Quadrat
- Sweep/Kick Sample



Scale 1 : 2,000 at A3

FOR INFORMATION

[Location](#)

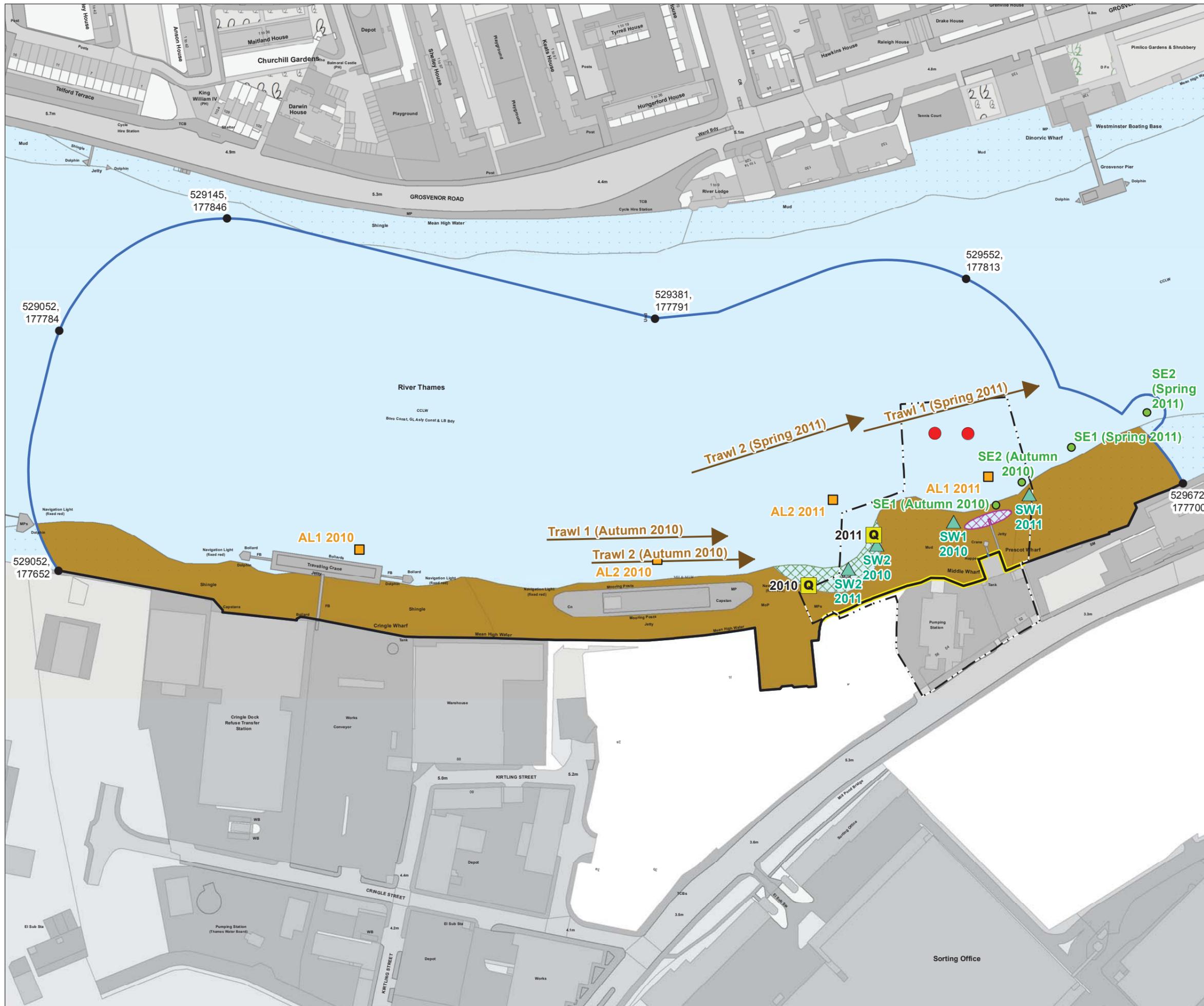
Heathwall Pumping Station
London Borough of Wandsworth

[Document Information](#)

Environmental Statement

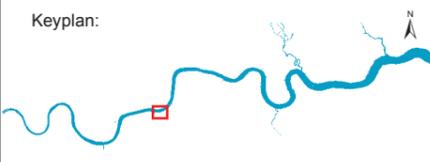
Aquatic ecology - habitats and sampling locations
Vol.15 Figure 5.4.1

1PL03-AE-20097
January 2013



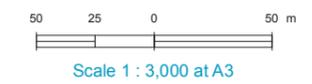


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- Key
- Limits of Land to be Acquired or Used
 - 250m from Site
 - Local Authority Boundary
- Sites of Importance for Nature Conservation (SINC)
- Metropolitan Importance
 - Borough Importance
 - Local Importance

Note:
Aerial Imagery taken in 2010, before assessment.



FOR INFORMATION

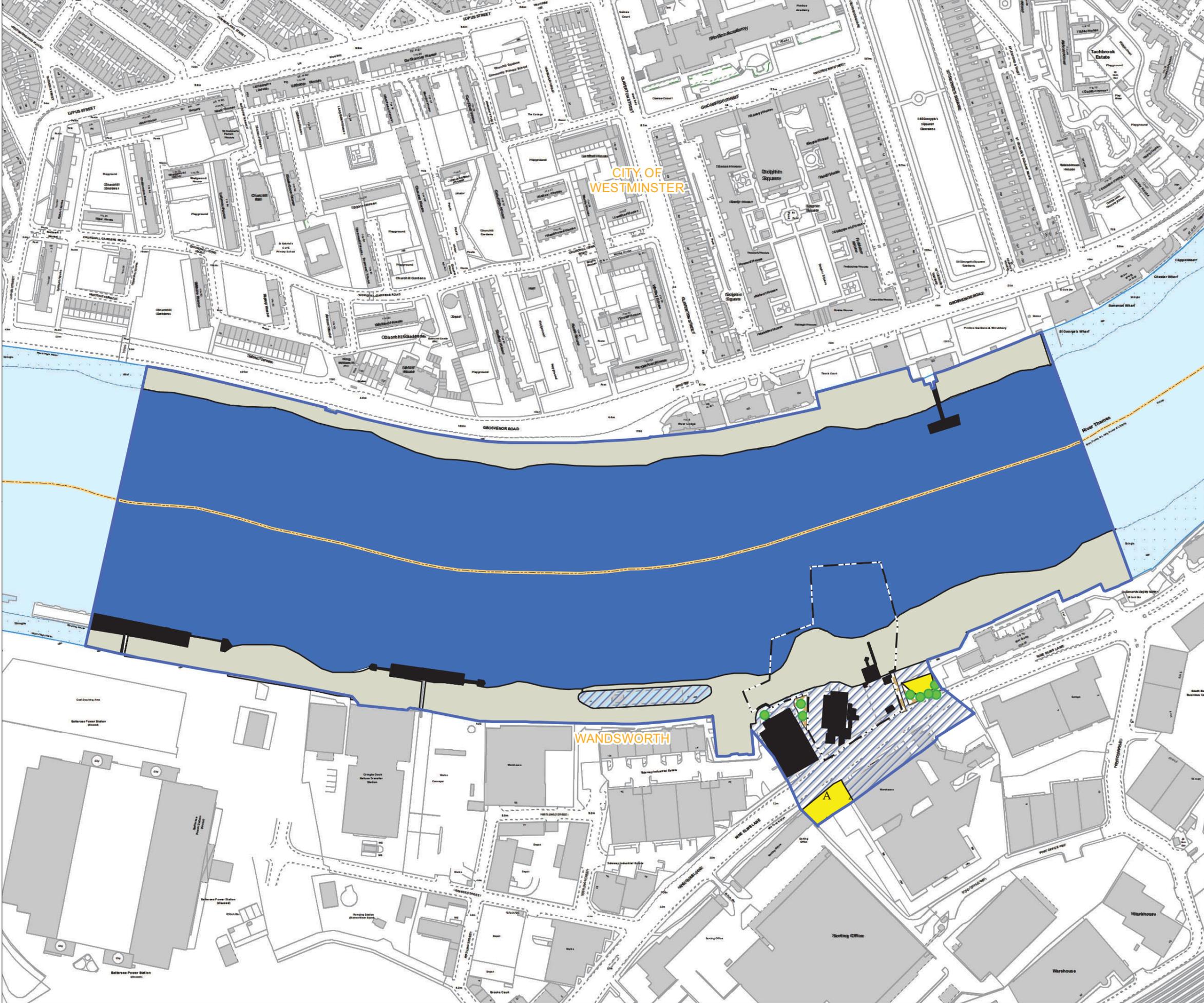
Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Environmental Statement
Terrestrial ecology - designated sites

Vol. 15 Figure 6.4.1
1PL03-TE-40128
January 2013



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- Keyplan:
- Limits of Land to be Acquired or Used
 - Survey Area
 - Local Authority Boundary
 - Built-up Areas - Buildings
 - Cultivated/Disturbed Land - Amenity Grassland
 - Cultivated/Disturbed Land - Introduced Shrub
 - ▨ Hard Standing
 - Intertidal - Mud/Sand
 - Running Water
 - Scattered Tree



FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Terrestrial ecology – Phase 1 Habitat Survey

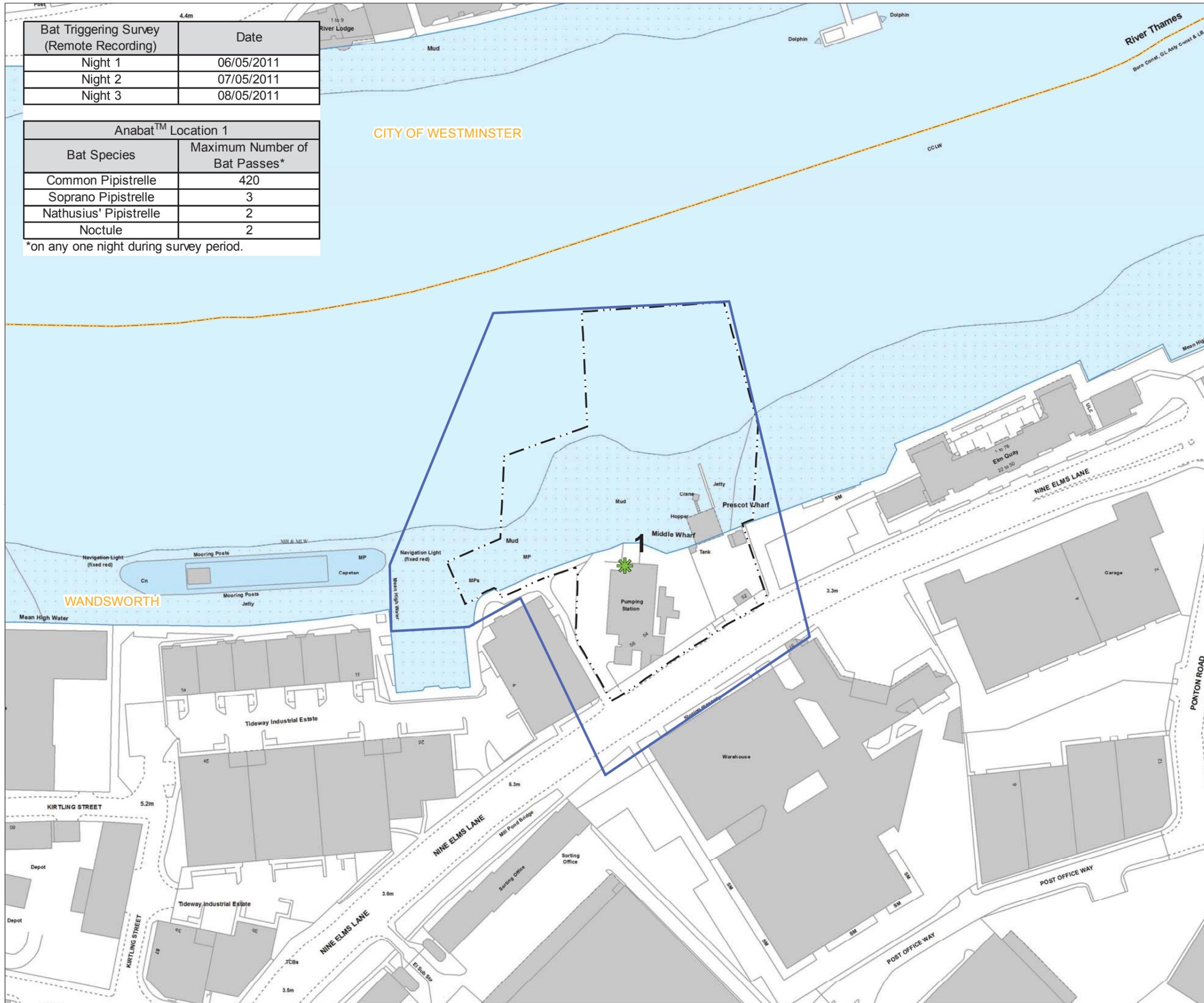
Vol. 15 Figure 6.4.2
 1PL03-TE-40174
 January 2013



Bat Triggering Survey (Remote Recording)	Date
Night 1	06/05/2011
Night 2	07/05/2011
Night 3	08/05/2011

Anabat™ Location 1	
Bat Species	Maximum Number of Bat Passes*
Common Pipistrelle	420
Soprano Pipistrelle	3
Nathusius' Pipistrelle	2
Noctule	2

*on any one night during survey period.



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- Key**
- Limits of Land to be Acquired or Used
 - Survey Area
 - Local Authority Boundary
- Bat Triggering Survey (Remote Recording)**
- ★ Anabat™ Location (1)
- Activity Survey (Remote Recording)**
- (Dawn at 04:45 on 28/06/2011)

Note:
No bats recorded during activity survey.



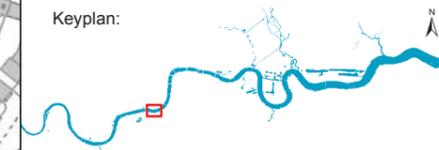
FOR INFORMATION

Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Environmental Statement
Terrestrial ecology – bat triggering (remote recording) and bat activity survey
Vol. 15 Figure 6.4.3
1PL03-TE-40192
January 2013

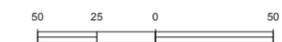
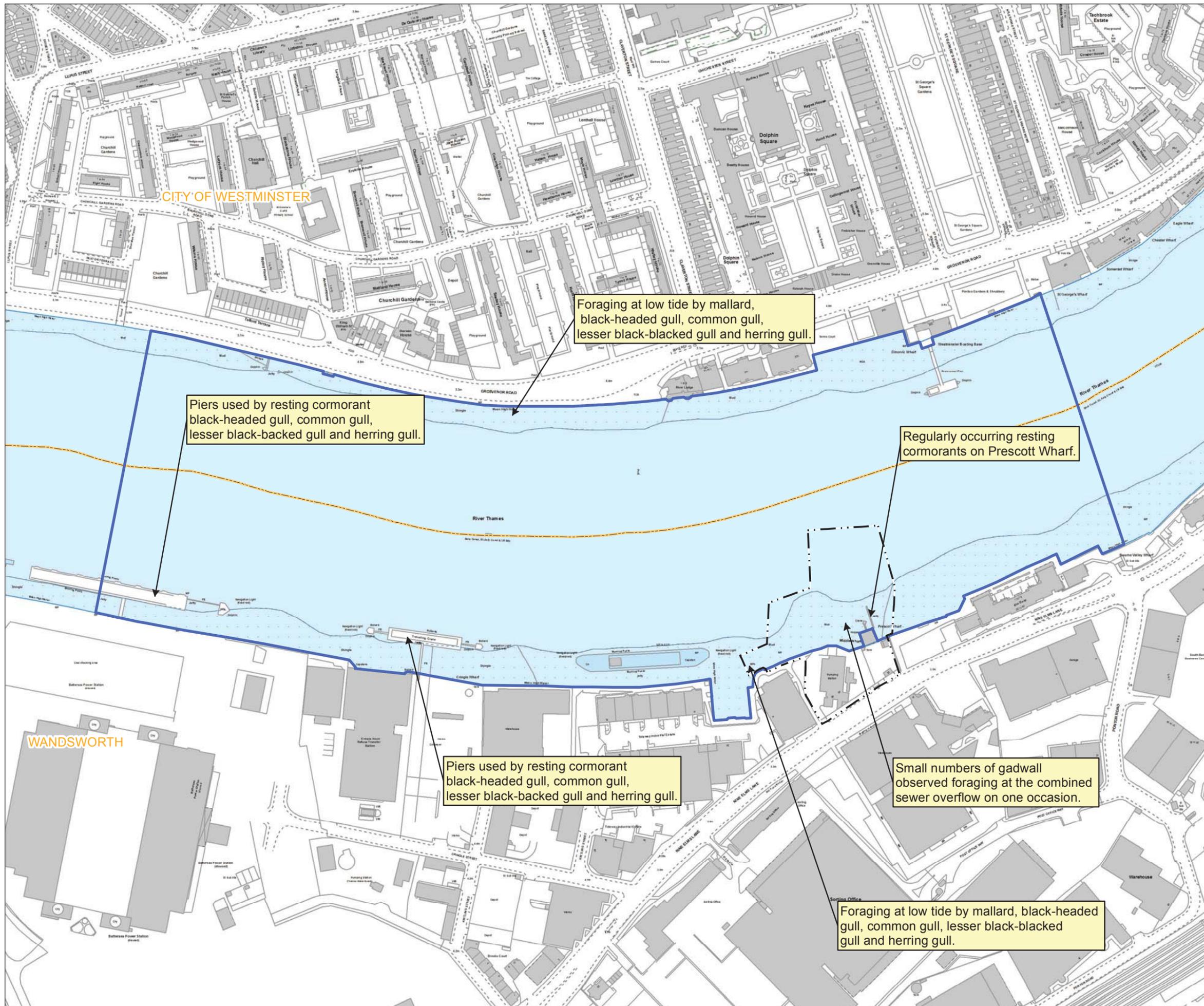


Keyplan:



Key

- Limits of Land
- to be Acquired or Used
- Survey Boundary
- Local Authority Boundary



Scale 1 : 3,000 at A3

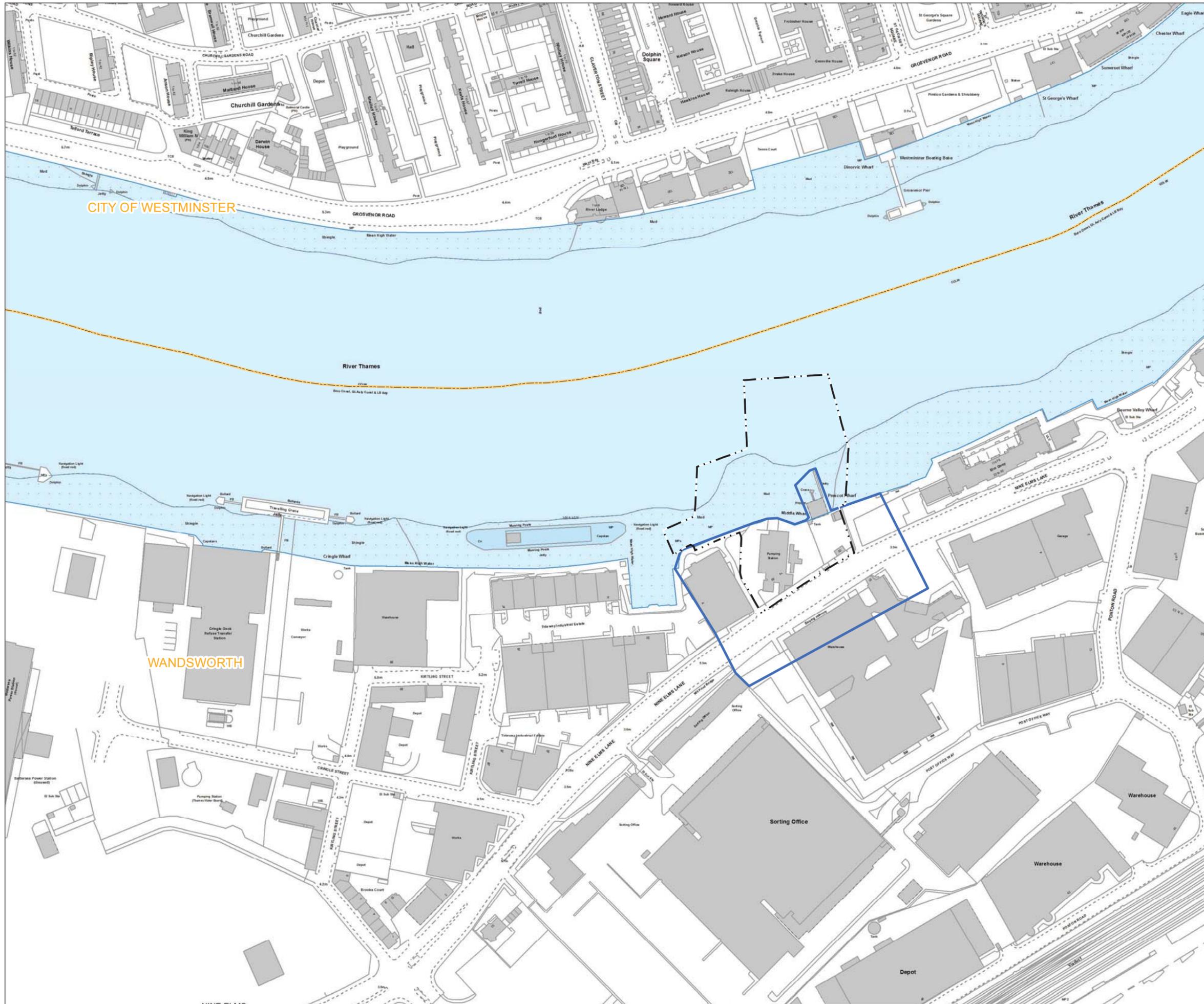
FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

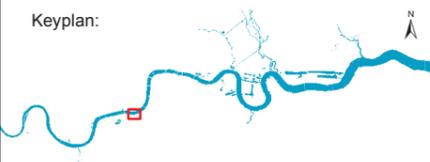
Document Information
Environmental Statement
 Terrestrial ecology – wintering birds survey

Vol.15 Figure 6.4.4
 1PL03-TE-40073
 January 2013





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- Key**
- Limits of Land
 - - - to be Acquired or Used
 - ▭ Survey Area
 - ▭ Local Authority Boundary

Note:
No field signs recorded during survey



FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Terrestrial ecology – black redstart survey

Vol. 15 Figure 6.4.5
 1PL03-TE-40095
 January 2013





Key

- Limits of Land to be Acquired or Used
- Assessment Area
- Heritage Feature/Findspot
- Past Archaeological Investigation
- Statutorily Listed Building
- Wreck/Obstruction
- Bazalgette Sewer
- Wreck/Obstruction

The reference numbers for historic environment features correspond to the descriptions in the 'Gazetteer of known heritage assets' in Environmental Statement Vol. 15 Appendix E.1

Note: Archaeological Priority Zones/Conservation Areas not shown



Scale 1 : 5,000 at A3

FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

Environmental Statement
Historic environment -
historic environment features map
Vol.15 Figure 7.4.1

1PL03-HE-60089
January 2013





- Key
- Limits of Land to be Acquired or Used
 - Local Authority Boundary
 - Statutorily Listed Building
 - Conservation Areas
 - View of Heritage Value (VHV)
 - Operational phase ZTV
 - Construction phase ZTV



The reference number for historic environment features correspond to the descriptions in the 'Gazetteer of known heritage assets' in Environmental Statement Vol. 15 Appendix E.1



Scale 1 : 3,500 at A3

FOR INFORMATION

Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Environmental Statement
Historic environment - historic character and setting of heritage assets
Vol. 15 Figure 7.4.2
1PL03-HE-65212
January 2013



Keyplan:



Key

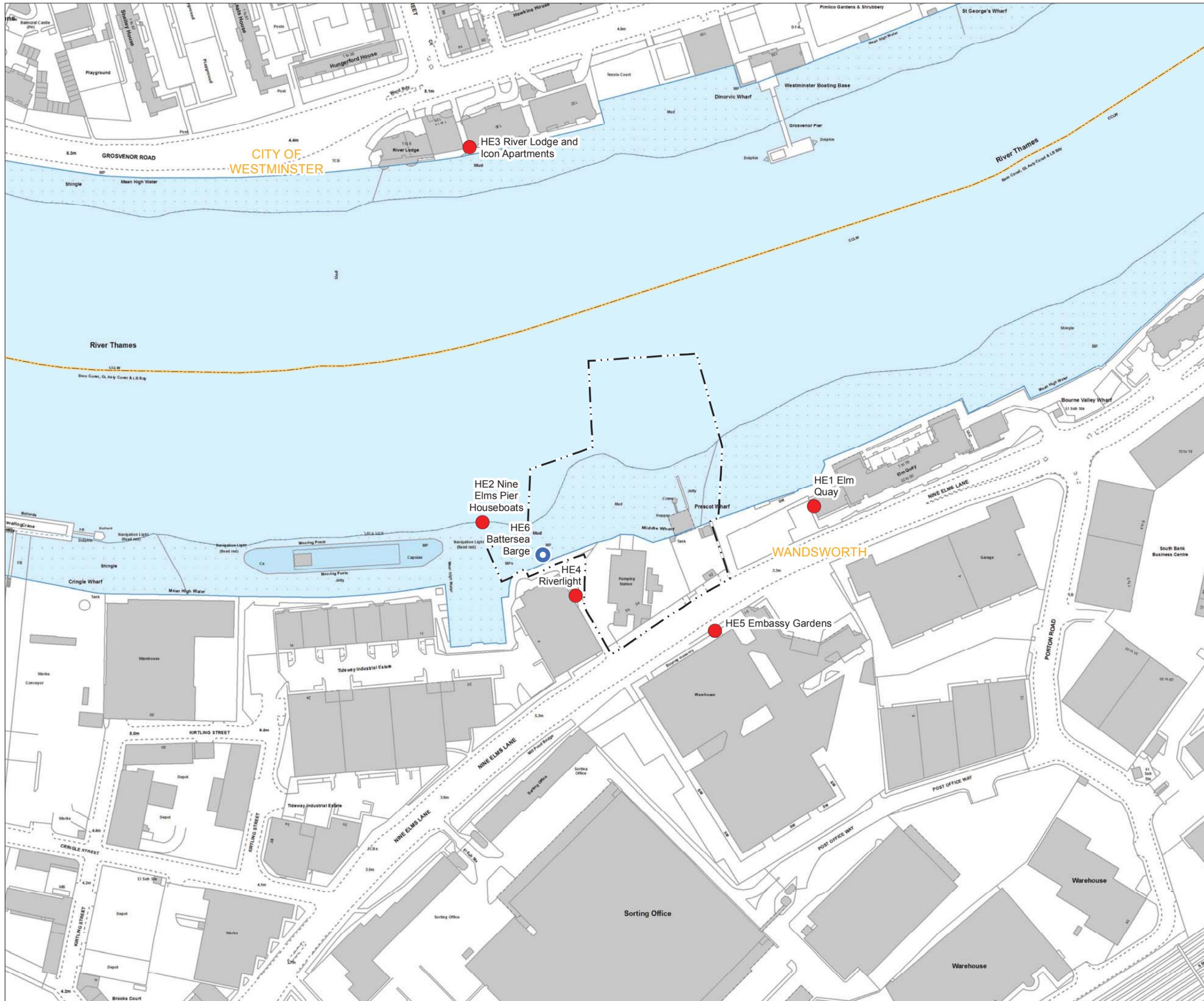
--- Limits of Land to be Acquired or Used

Local Authority Boundary

Representative Receptor Locations:

● Residential

○ Non-Residential



Note:
The receptors are selected on the basis that they are representative of sensitive land uses closest to the site.



Scale 1 : 2,000 at A3

FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Environmental Statement

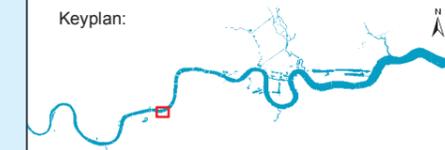
Noise and vibration - receptor locations

Vol.15 Figure 9.4.1

1PL03-NV-40131
January 2013

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Keyplan:



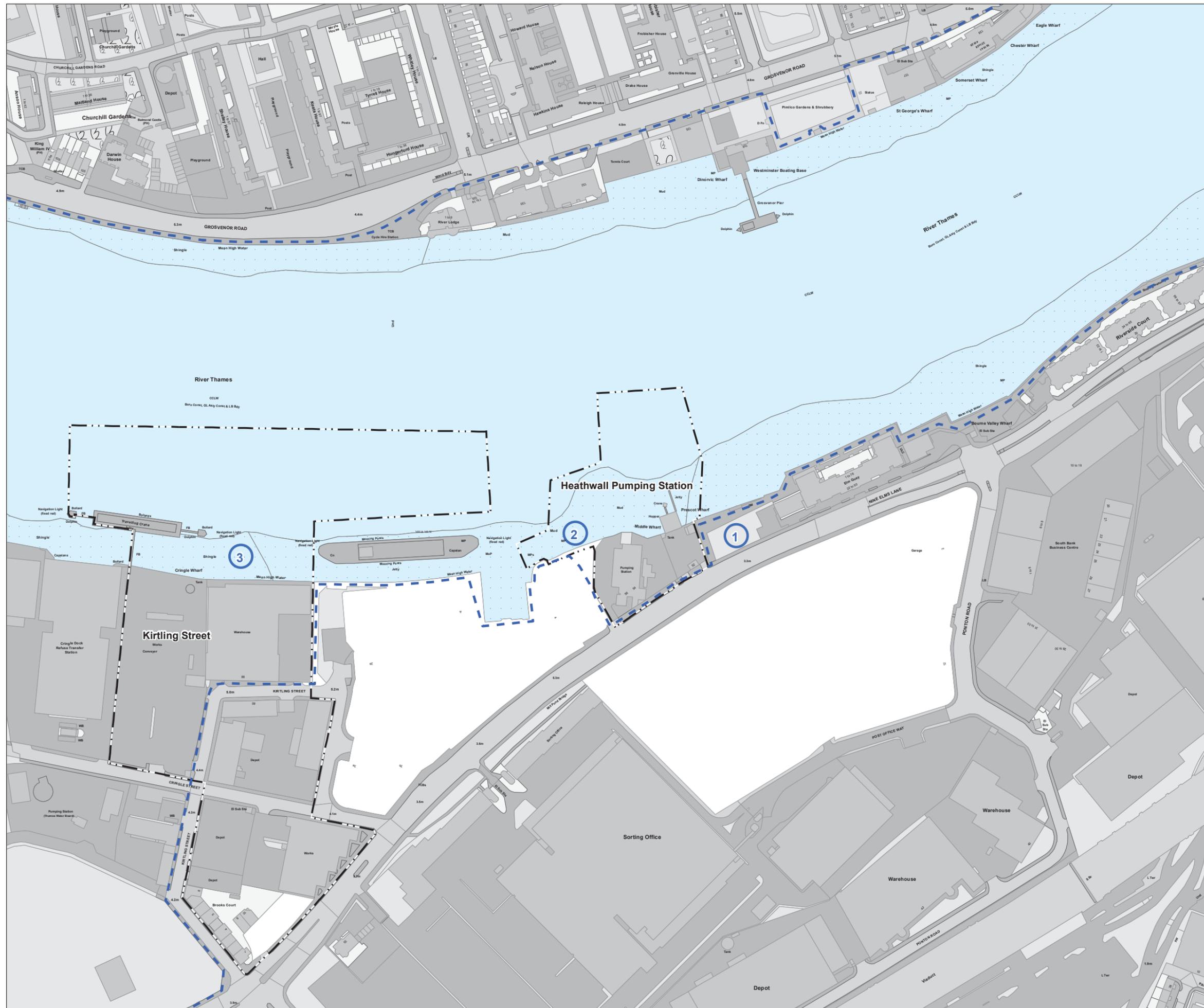
Key

- Limits of Land to be Acquired or Used
- Thames Path
- Receptors and Site Context Features

Receptors and Site Context Features

1. Elm Quay Pocket Park
2. Battersea Barge
3. Kirtling Street Proposed Construction Site

Note: Residential receptors have been identified on land use plans for this site.



Scale 1 : 2,500 at A3

FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

Environmental Statement

Socio-economics - context plan

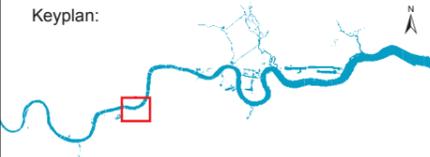
Vol.15 Figure 10.4.1

1PL03-SE-20049

January 2013

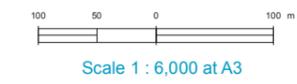


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- Key:**
- Limits of Land
 - - - to be Acquired or Used
 - Local Authority boundary
 - Extents of construction phase townscape assessment area
 - Extents of operational phase townscape assessment area
 - River Thames and tidal tributaries

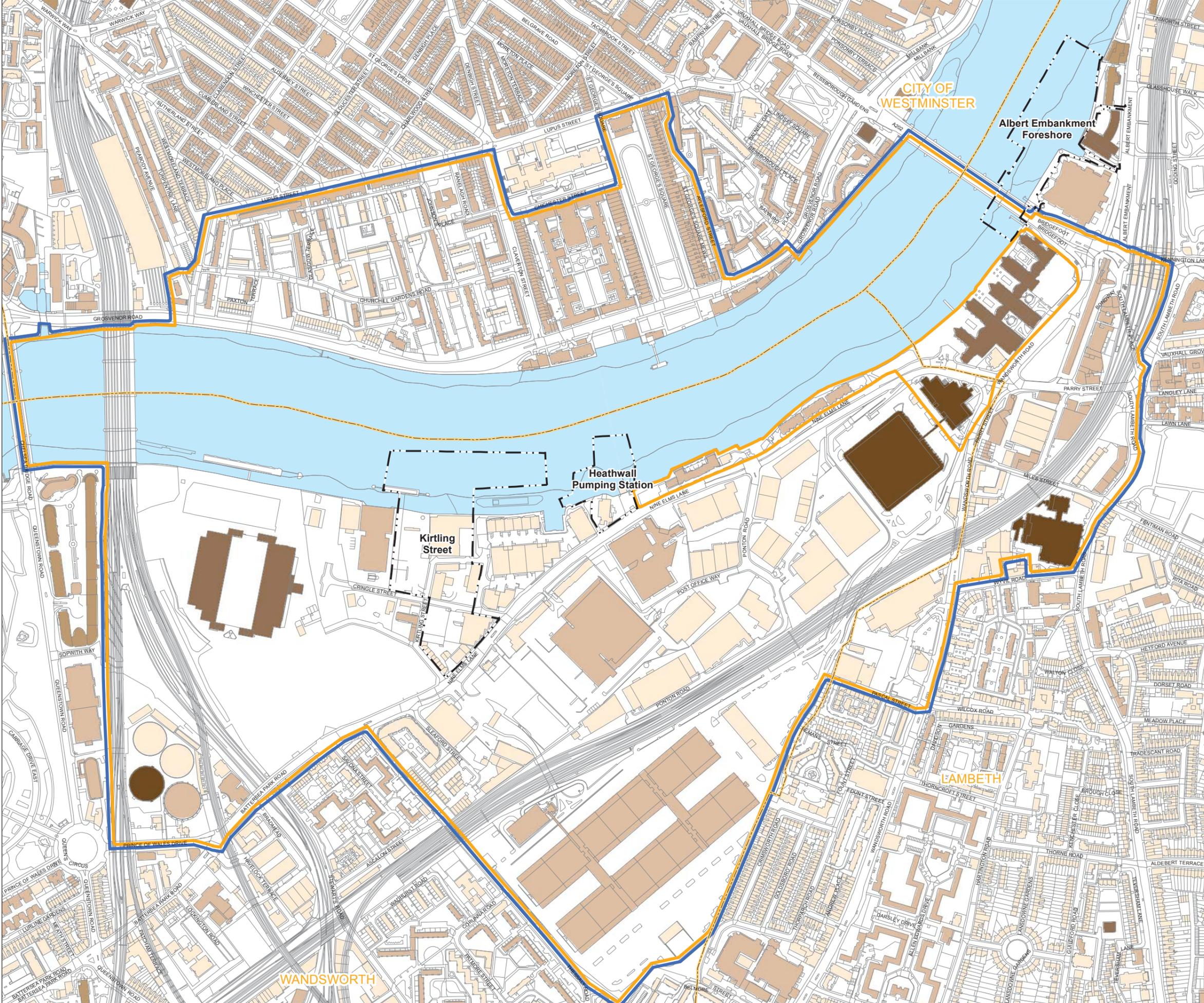
- Building heights**
- 0 - 20m
 - 20 - 40m
 - 40 - 60m
 - 60 - 80m
 - 80 - 100m
 - >100m



FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Townscape and visual Development pattern and scale
 Vol. 15 Figure 11.4.1
 1PL03-TS-40433
 January 2013



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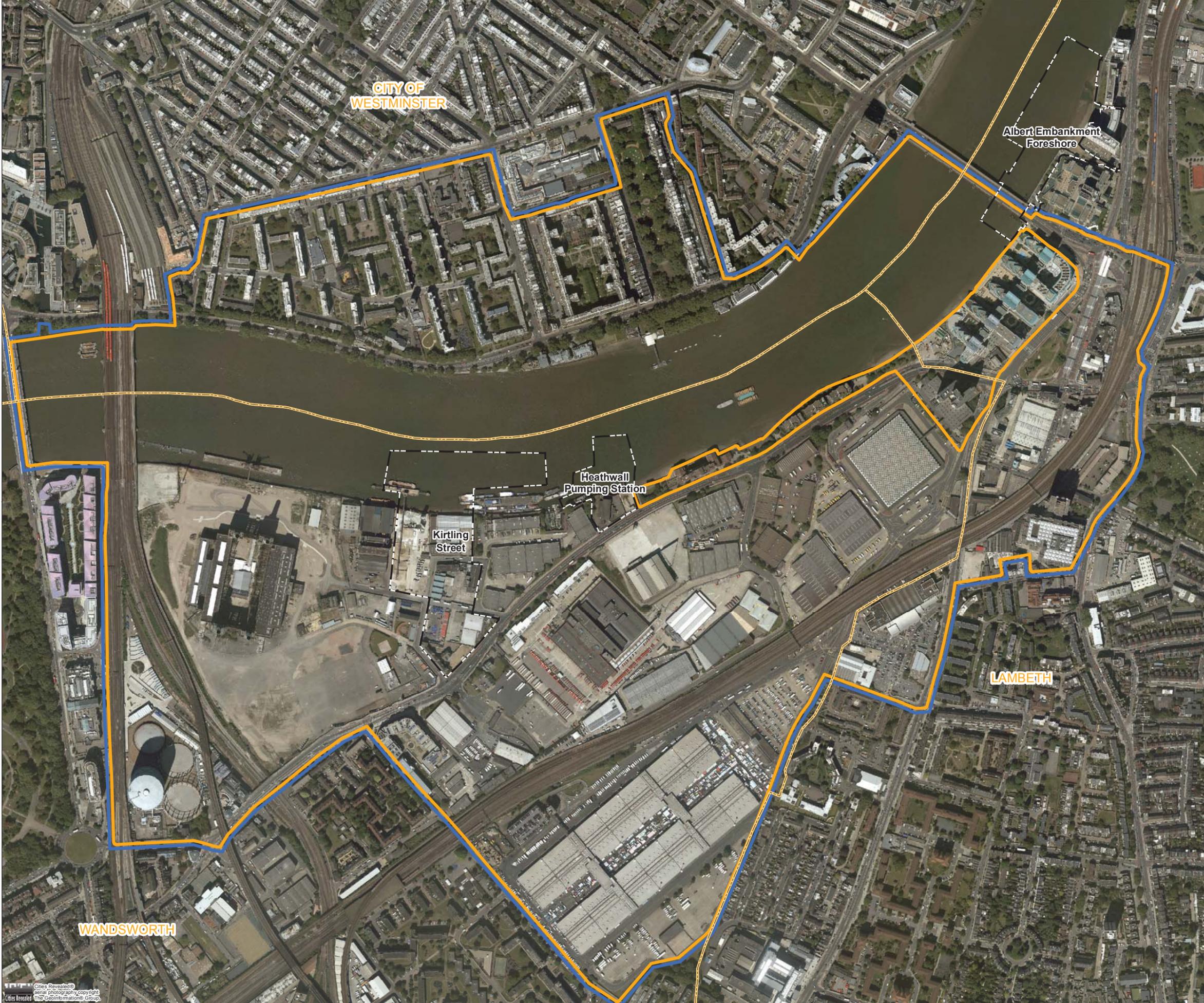
- Key:
- Limits of Land to be Acquired or Used
 - Local Authority boundary
 - Extents of construction phase townscape assessment area
 - Extents of operational phase townscape assessment area



FOR INFORMATION

Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Environmental Statement
Townscape and visual
Aerial photo showing pattern of vegetation
Vol. 15 Figure 11.4.2
1PL03-TS-40434
January 2013



Keyplan:



Key:

- Limits of Land to be Acquired or Used
- Local Authority boundary
- Extents of construction phase townscape assessment area
- Extents of operational phase townscape assessment area
- National Rail stations
- London Underground
- Thames Path
- Provision for cyclists alongside busy roads
- London cycle routes
- Rail
- A roads
- River Thames and tidal tributaries

100 50 0 100 m

Scale 1 : 6,000 at A3

FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

Environmental Statement

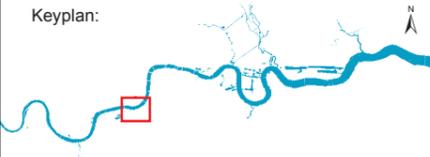
Townscape and visual
Transport routes
Vol. 15 Figure 11.4.3

1PL03-TS-40435
January 2013

Thames Tideway Tunnel
Creating a cleaner, healthier River Thames

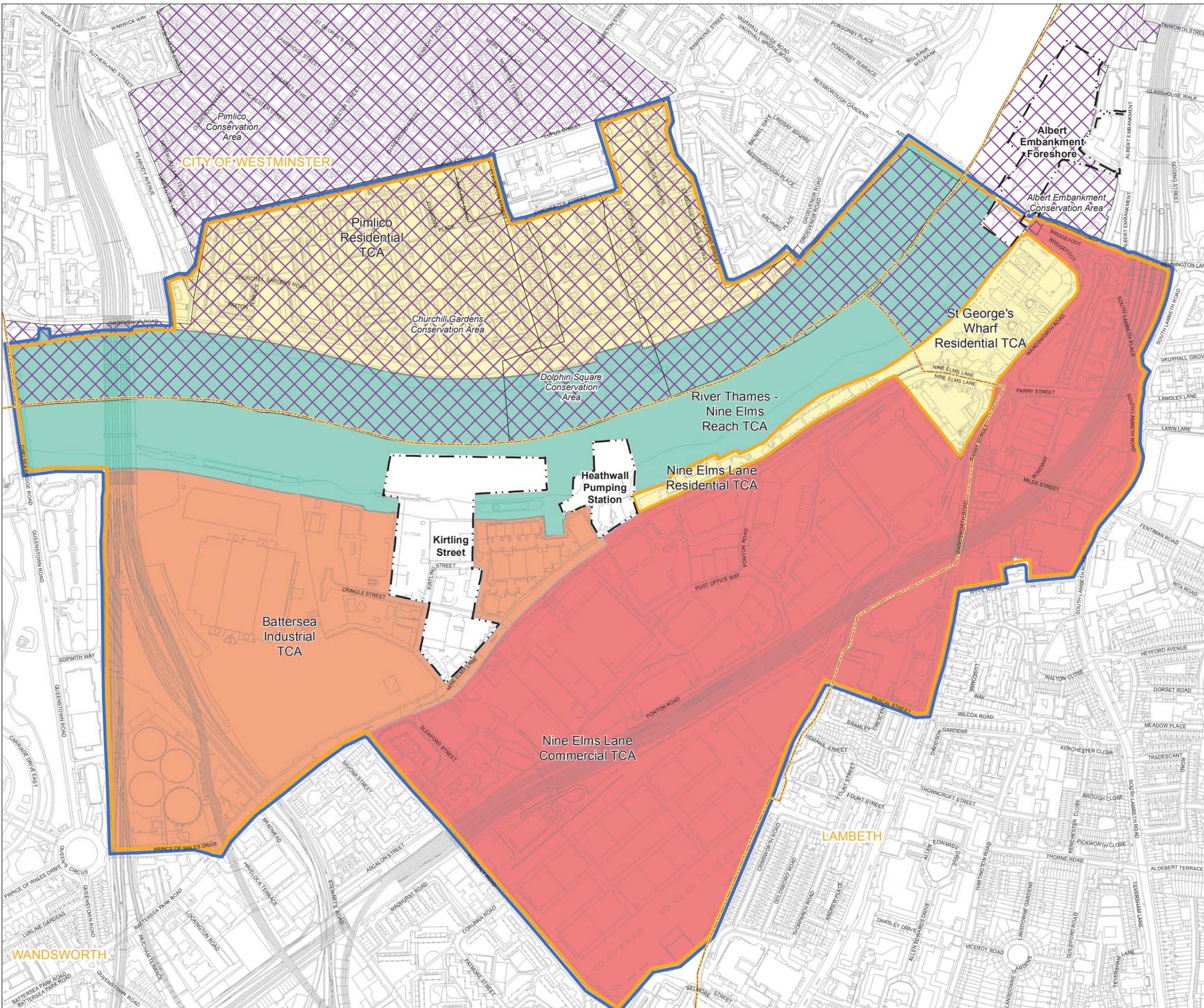
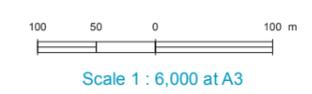


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- Key:
- Limits of Land to be Acquired or Used
 - Local Authority boundary
 - Extents of construction phase townscape assessment area
 - Extents of operational phase townscape assessment area
 - Conservation areas

The colour fills shown on the plan are used to differentiate between townscape character areas



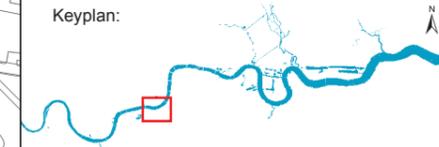
FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Townscape and visual townscape character areas
 Vol. 15 Figure 11.4.4
 1PL03-TS-40436
 January 2013



Keyplan:



Key:

The zone of theoretical visibility (ZTV) is a computer generated model which indicates the theoretical visibility of the construction works (including cranes) and operational structures. As described in Volume 2 the ZTV is a starting point for defining the assessment area and for informing the assessment of likely significant effects. Theoretical visibility does not necessarily mean a location would be subject to adverse effects.

- Limits of Land
- to be Acquired or Used
- Local Authority boundary
- Visual assessment points
- Verifiable photomontage locations
- Construction phase ZTV
- Operational phase ZTV
- River Thames and tidal tributaries



Scale 1 : 6,000 at A3

FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

Environmental Statement

Townscape and visual

Viewpoints

Vol. 15 Figure 11.4.5

1PL03-TS-40437

January 2013



Current baseline

Elm Quay Court

Heathwall Pumping Station

Cemex

Waste transfer station Battersea Power Station

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Keyplan:



Thames Path

Expanded image



Technical information

Location: Viewpoint 1.7: View southeast and south from residences along Grosvenor Road, close to Churchill Gardens Estate
 Date taken: 6 May 2011
 Time taken: 10.53
 Tide position: Low tide
 Focal length: 51.701mm

This verifiable photomontage shows an illustration of how the construction site may be set up during phase 1 (Site set up, shaft construction and tunnelling). The layout of the construction activities may change within the maximum extent of working area (see Construction phases – phase 1 site set up, shaft construction and tunnelling [see volume of figures - Section 1]), however the assessment of effects would be no worse than that described in the Environmental Statement Vol 15 Heathwall Pumping Station – Section 11 Townscape and visual.

Construction phase verifiable photomontage

Future base case scheme - Riverlight

Future base case scheme - Battersea Power Station



FOR INFORMATION

Expanded image



Construction plant and cranes

Site cofferdam

Campshed for barges

Location
Heathwall Pumping Station
 London Borough of Wandsworth

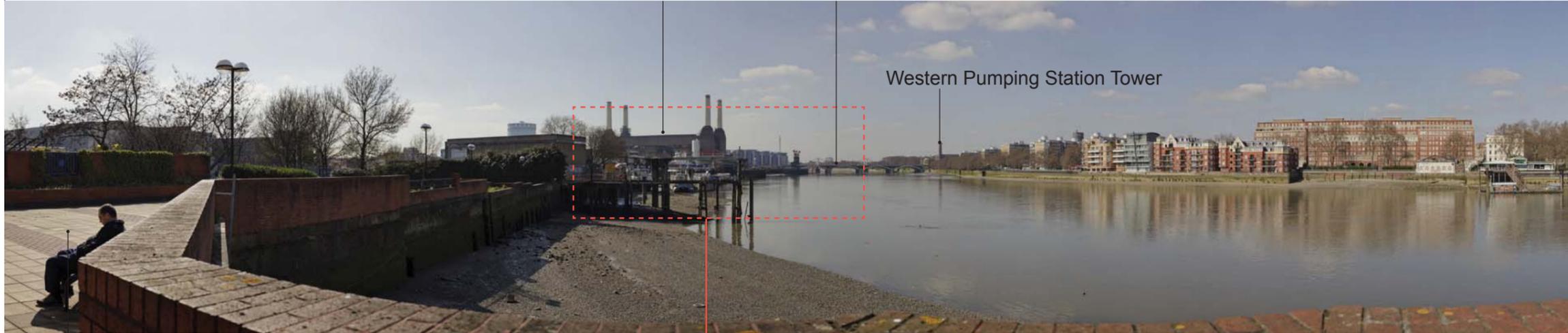
Document Information
Environmental Statement
 Townscape and visual
 Viewpoint 1.7
 Construction phase verifiable photomontage
 Vol 15 Figure 11.5.1
 1PL03-TS-40438
 January 2013



Current baseline

Battersea Power Station Chelsea Bridge

Western Pumping Station Tower



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Keyplan:



Technical information

Location: Viewpoint 1.4: View southwest from residences along Nine Elms Lane close to Heathwall pumping station
 Date taken: 23 March 2011
 Time taken: 13.06
 Tide position: Low tide
 Focal length: 51.703mm

This verifiable photomontage shows an illustration of the site in Year 1 of operation. The layout of the proposed development may change within the zones shown on the Site works parameter plan [see volume of figures – Section 1], however the assessment of effects would be no worse than that described in the Environmental Statement Vol 15 Heathwall Pumping Station – Section 11 Townscape and visual.

Thames Path

Expanded image

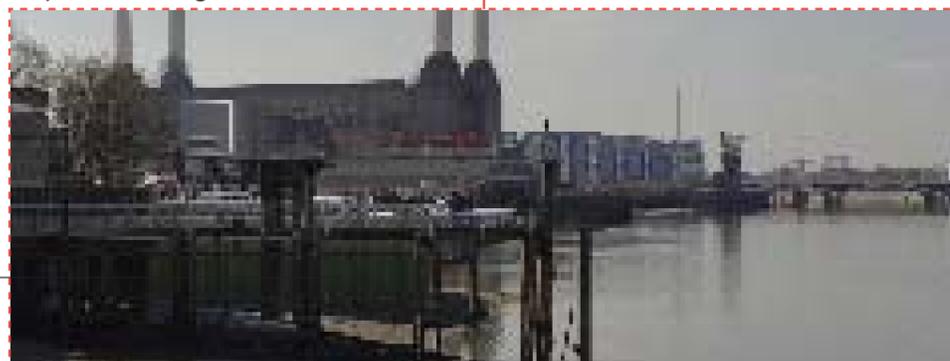


Operational phase verifiable photomontage



Future base case scheme - Riverlight

Expanded image



New river wall

Future base case scheme - Battersea Power Station

FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Townscape and visual
 Viewpoint 1.4
 Operational phase verifiable photomontage
 Vol 15 Figure 11.6.1
 1PL03-TS-4040439
 January 2013



Current baseline

Elm Quay Court

Heathwall Pumping Station

Cemex

Waste transfer station Battersea Power Station

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Keyplan:



Thames Path

Expanded image



Technical information

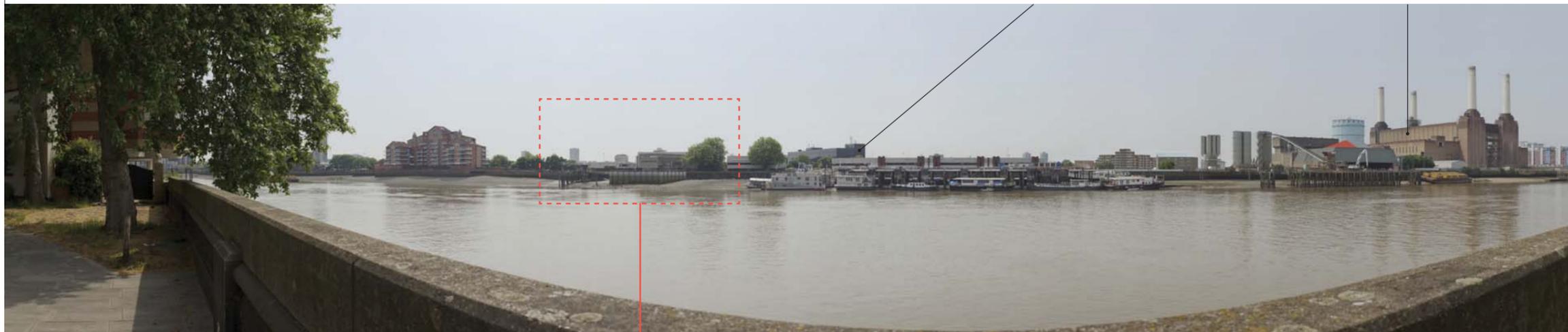
Location: Viewpoint 1.7: View southeast and south from residences along Grosvenor Road, close to Churchill Gardens Estate
Date taken: 6 May 2011
Time taken: 10.53
Tide position: Low tide
Focal length: 51.701mm

This verifiable photomontage shows an illustration of the site in Year 1 of operation. The layout of the proposed development may change within the zones shown on the Site works parameter plan [see volume of figures – Section 1], however the assessment of effects would be no worse than that described in the Environmental Statement Vol 15 Heathwall Pumping Station – Section 11 Townscape and visual.

Operational phase verifiable photomontage

Future base case scheme - Riverlight

Future base case scheme - Battersea Power Station



FOR INFORMATION

Expanded image



New river wall

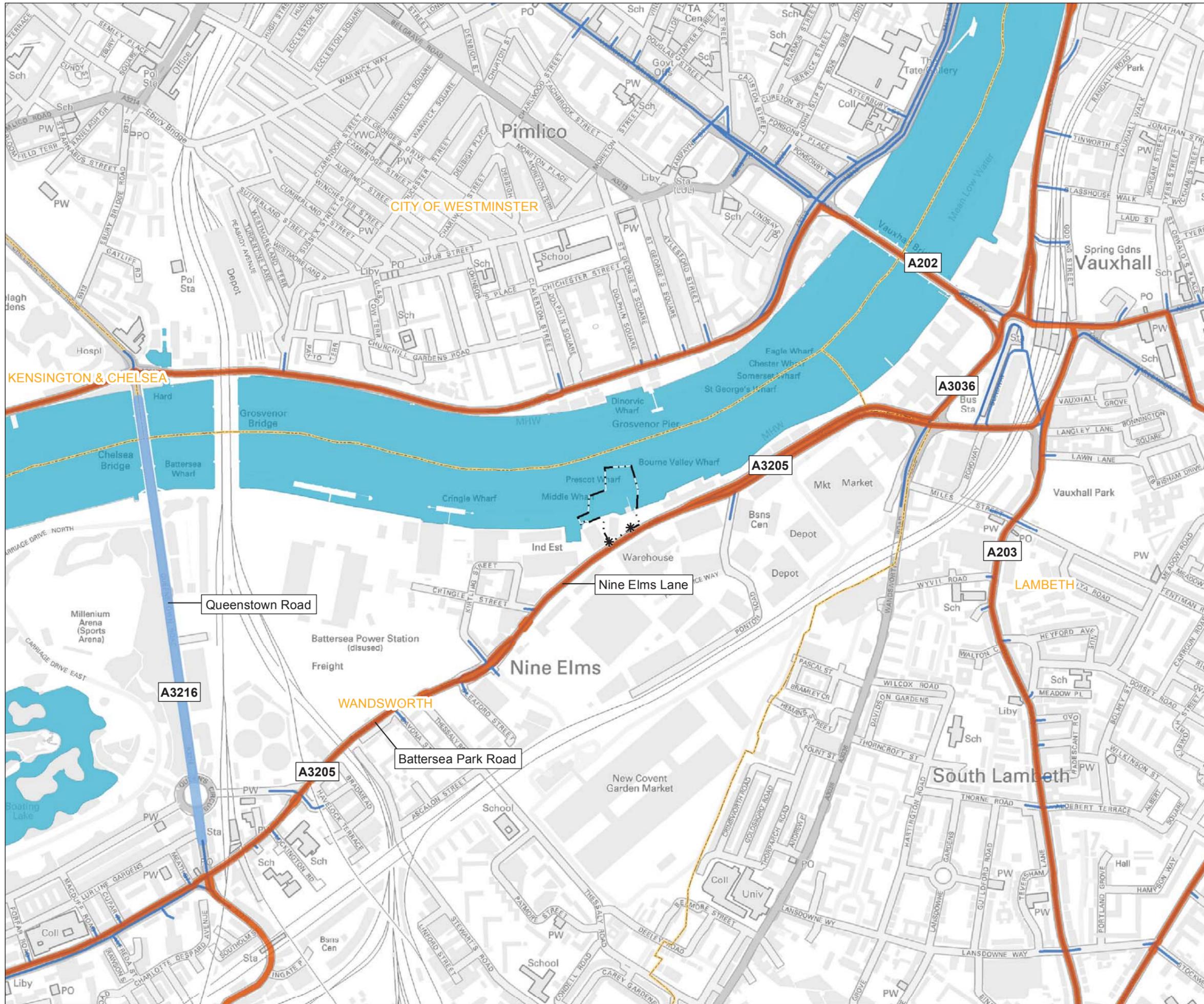
Location
Heathwall Pumping Station
London Borough of Wandsworth

Document Information
Environmental Statement
Townscape and visual
Viewpoint 1.7
Operational phase verifiable photomontage
Vol 15 Figure 11.6.2
1PL03-TS-40440
January 2013





- Key**
- * Site access
 - TFL road network
 - Strategic road network
 - Primary construction route
 - Limits of Land to be Acquired or Used
 - Local authority boundary



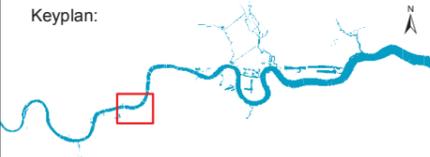
FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough Of Wandsworth

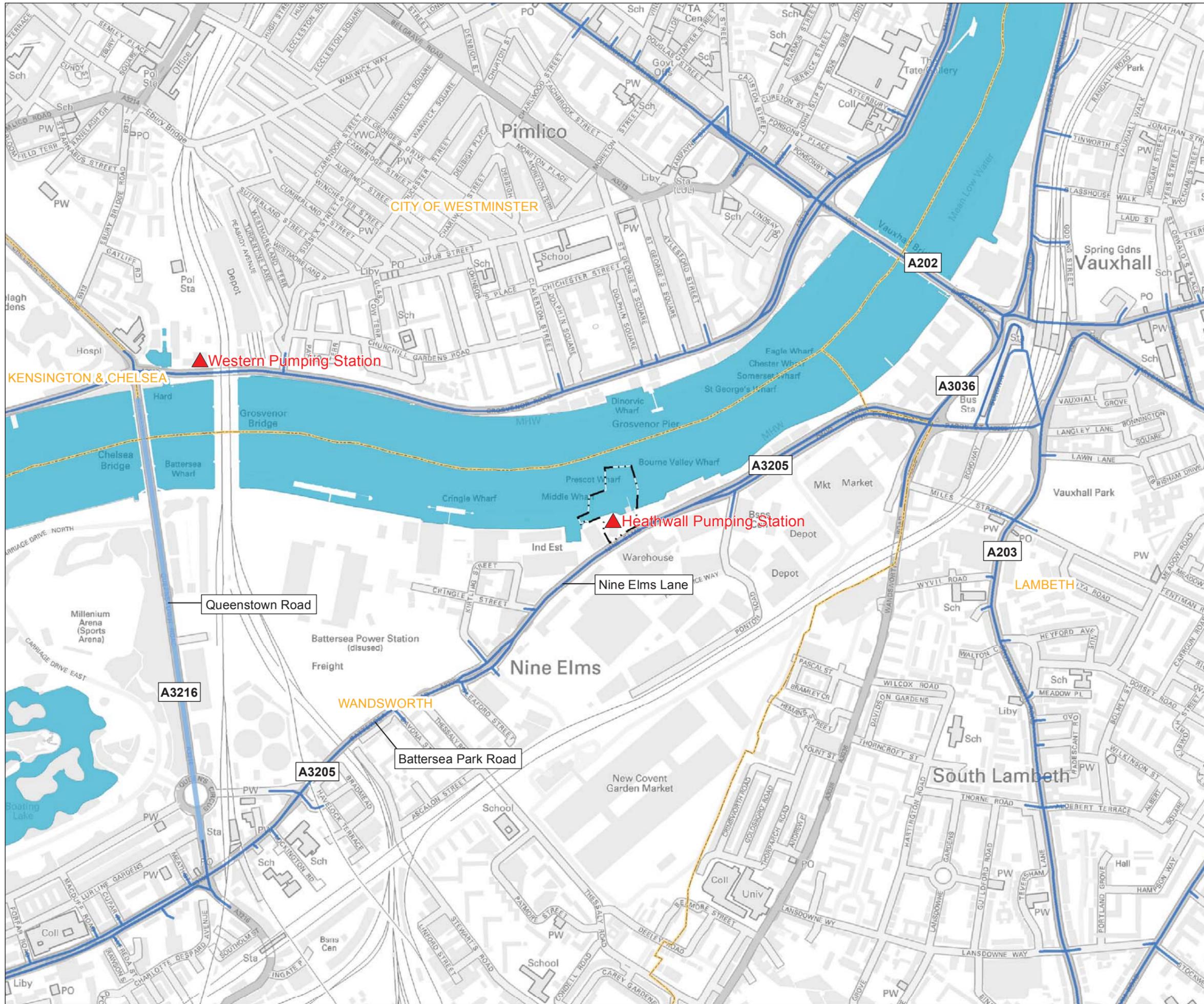
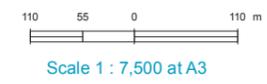
Document Information
Environmental Statement
 Transport - construction traffic routes

Vol.15 Figure 12.2.1
 1PL03-TT-50452
 January 2013





- Key**
- Pumping station
 - TFL road network
 - Strategic road network
 - Limits of Land to be Acquired or Used
 - Local authority boundary



FOR INFORMATION

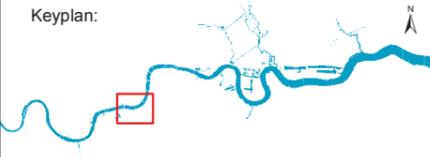
Location
Heathwall Pumping Station
 London Borough Of Wandsworth

Document Information
Environmental Statement
 Transport - site location plan

Vol.15 Figure 12.4.1
 1PL03-TT-50460
 January 2013



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- Key**
- National rail stations with cycle parking
 - Underground stations with cycle parking
 - Barclays cycle hire docking stations
 - London cycle routes
 - Cycle superhighway (open)
 - Cycle superhighway (open 2013)
 - Thames path
 - London strategic walk network
- National cycle network**
- Route Type**
- Open on-road
 - Limits of Land to be Acquired or Used
 - Local authority boundary

110 55 0 110 m
Scale 1 : 7,500 at A3

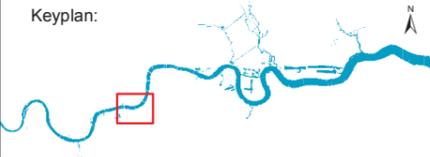
FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough Of Wandsworth

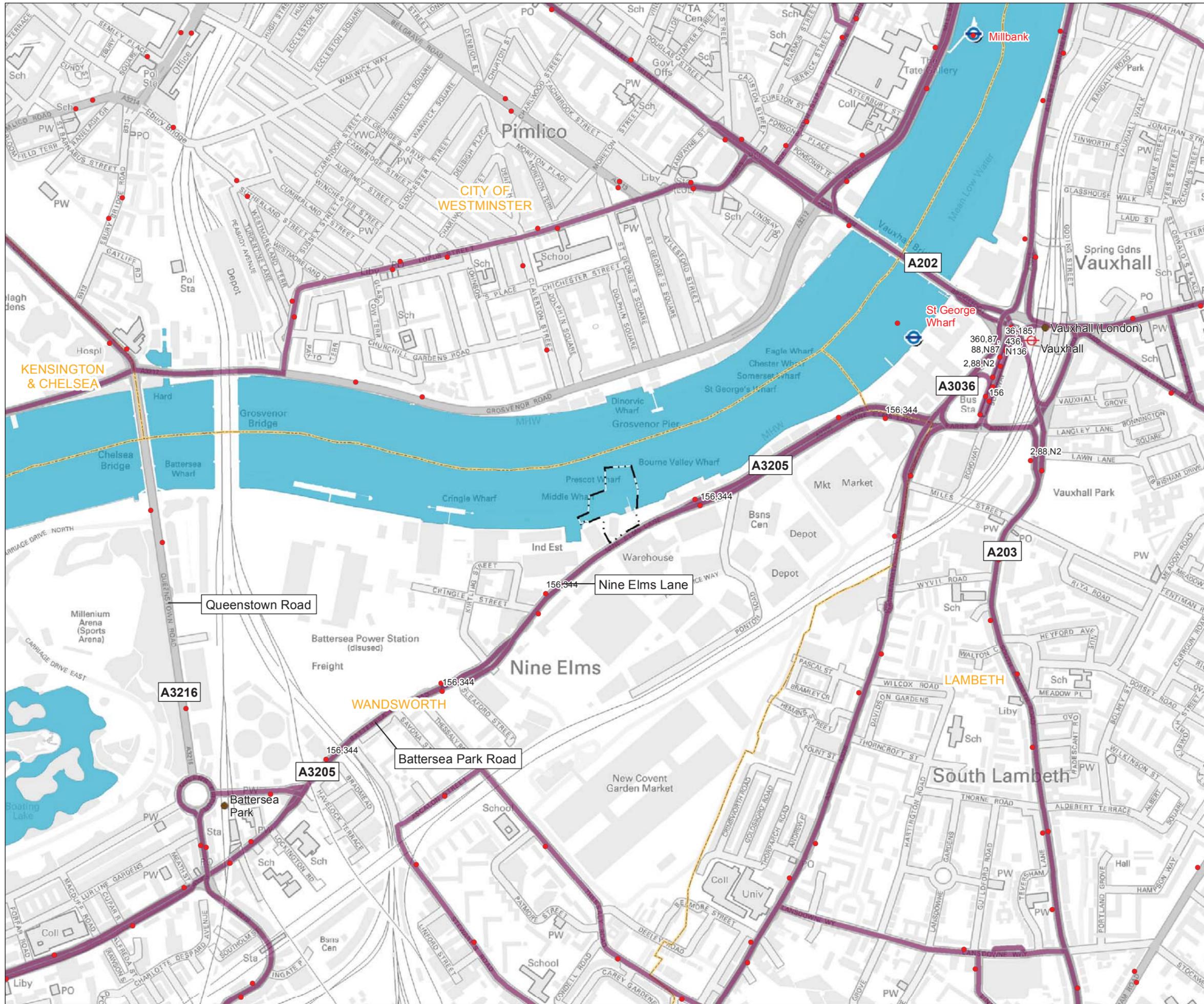
Document Information
Environmental Statement
 Transport - pedestrian and cycle network

Vol.15 Figure 12.4.2
 1PL03-TT-50468
 January 2013





- Key**
- TFL bus stops
 - Pier locations
 - National rail stations
 - London underground stations
 - TfL bus routes
 - Limits of Land to be Acquired or Used
 - Local authority boundary



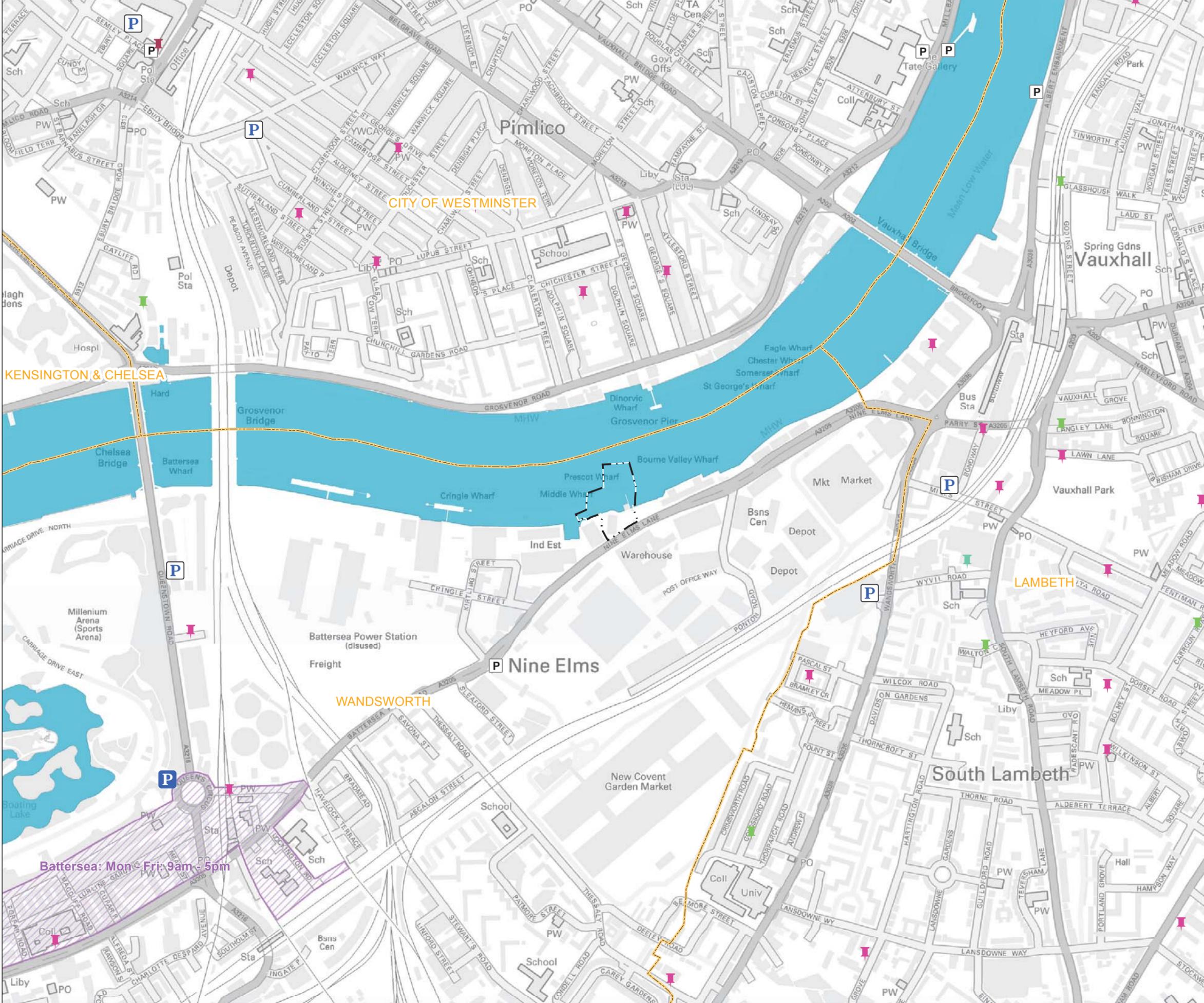
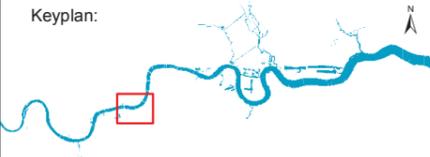
FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough Of Wandsworth

Document Information
Environmental Statement
 Transport - public transport

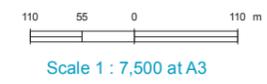
Vol.15 Figure 12.4.3
 1PL03-TT-50476
 January 2013





Key

- City Car
- Green Wheels
- Zip Car
- Council parking
- Private car parking
- Coach Parking
- Controlled Parking Zones and hours of operation
- Limits of Land to be Acquired or Used
- Local authority boundary



FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

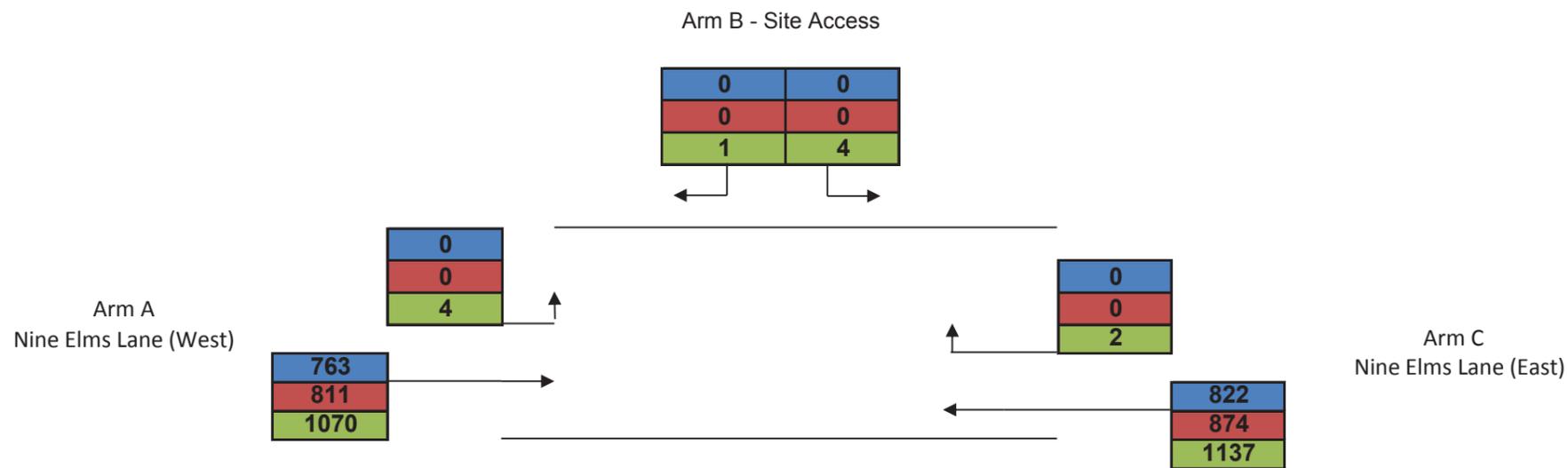
Document Information
Environmental Statement
 Transport - parking

Vol.15 Figure 12.4.4
 1PL03-TT-50484
 January 2013



Site: Heathwall
 Borough: Wandsworth
 Junction: Nine Elms Lane Site
 Junction no.: PBA 27

Data: Existing 2011 Traffic Flow in PCUs - AM Peak Hour
 from Traffic Survey



FOR INFORMATION

Location
 Heathwall PS
 London Borough of Wandsworth

Document Information
 Environmental Statement

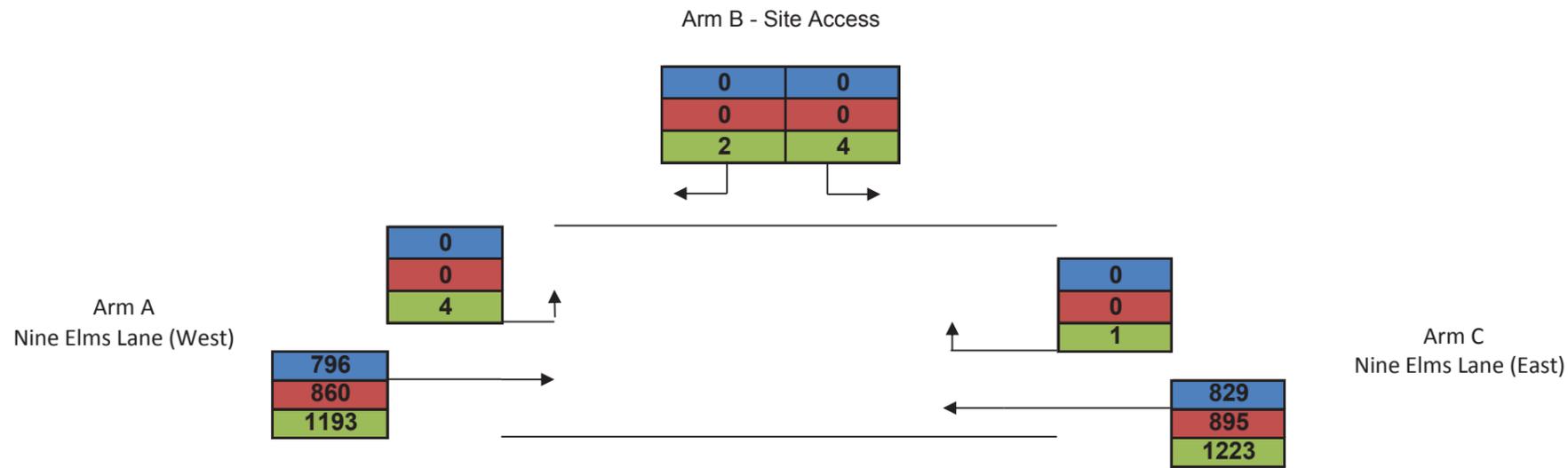
Baseline, Construction and
 Development case traffic flow
 (AM peak hour)

Vol. 15 Figure 12.4.6
 1PL03-TT-50863
 January 2013



Site: Heathwall
 Borough: Wandsworth
 Junction: Nine Elms Lane Site
 Junction no.: PBA 27

Data: Existing 2011 Traffic Flow in PCUs - PM Peak Hour
 from Traffic Survey



FOR INFORMATION

Location
Heathwall PS
 London Borough of Wandsworth

Document Information
Environmental Statement

Baseline, Construction and
 Development case traffic flow
 (PM peak hour)

Vol. 15 Figure 12.4.7
 1PL03-TT-50887
 January 2013

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Key

- Limits of Land to be Acquired or Used
- Thames Tideway Tunnel
 - Main Tunnel
 - Connection Tunnel
- Local Authority Boundary
- Drilled Boreholes
 - Depth (m)
 - 0 - 10
 - 10 - 30
 - 30+
- Proposed Boreholes
 - Water
 - Land
- EA Groundwater Level Monitoring Locations
 - ◆ Historical Data Available
 - ◆ Recent Data Available
 - ◆ EA Water Quality Monitoring Locations
 - ◆ EA Chalk Piezometric Level (mATD) - Jan 11
- Geology
 - Alluvium
 - Kempton Park Gravel Member
 - Langley Silt Member



Scale 1 : 10,000 at A3

FOR INFORMATION

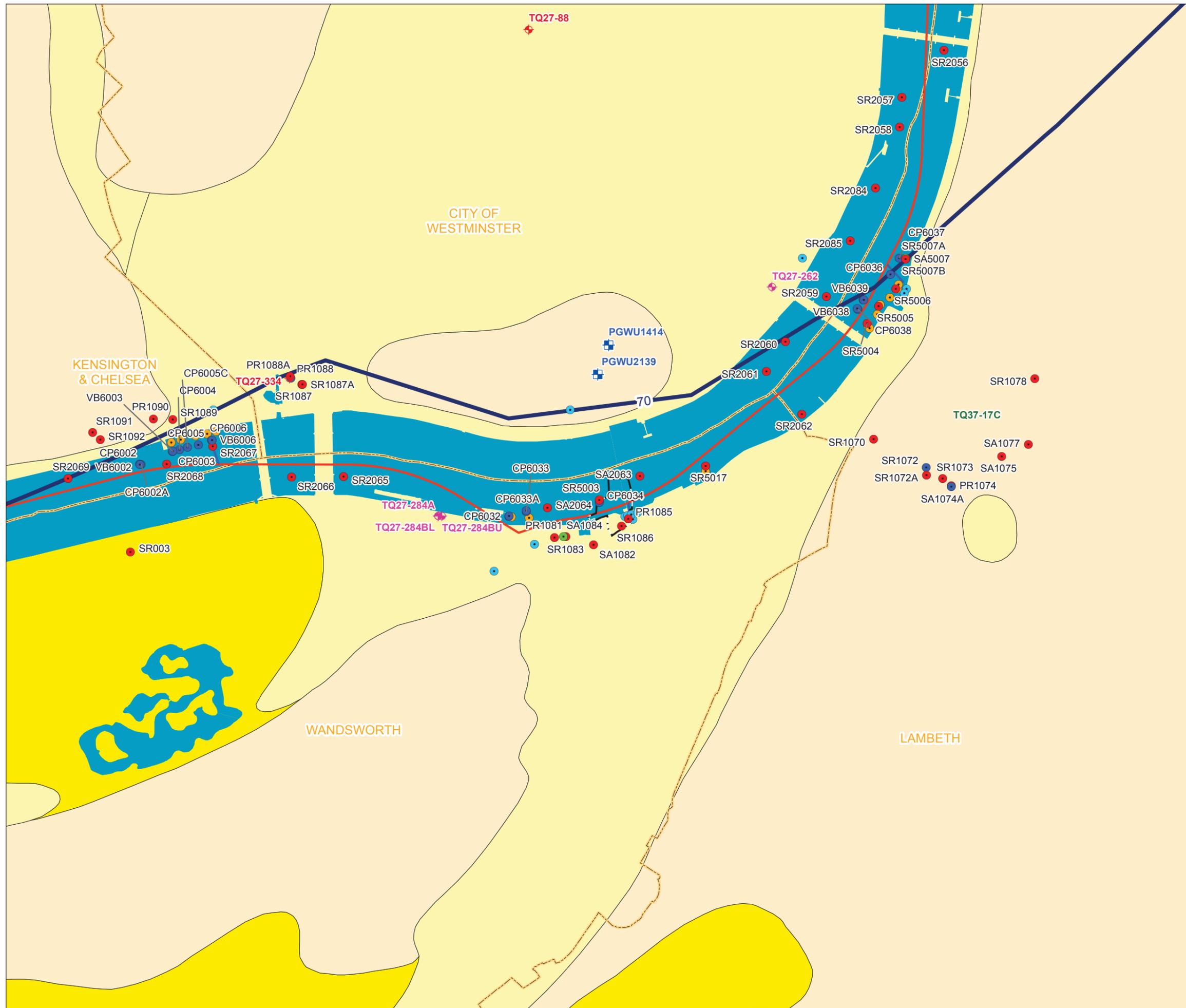
Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

Environmental Statement

Water resources – groundwater - superficial geology
Vol.15 Figure 13.4.1
1PL03-WR-20148
January 2013



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Key

- Limits of Land to be Acquired or Used
- Thames Tideway Tunnel
 - Main Tunnel
 - Connection Tunnel
- Local Authority Boundary
- Drilled Boreholes
 - Depth (m)
 - 0 - 10
 - 10 - 30
 - 30+
 - Proposed Boreholes
 - Water
 - Land
- EA Groundwater Level Monitoring Locations
 - ◆ Historical Data Available
 - ◆ Recent Data Available
 - ◆ EA Water Quality Monitoring Locations
 - ◆ EA Chalk Piezometric Level (mATD) - Jan 11
- Source Protection Zones
 - Zone I (Inner Protection Zone)
 - Zone II (Outer Protection Zone)
- Solid Geology
 - London Clay Formation



Scale 1 : 10,000 at A3

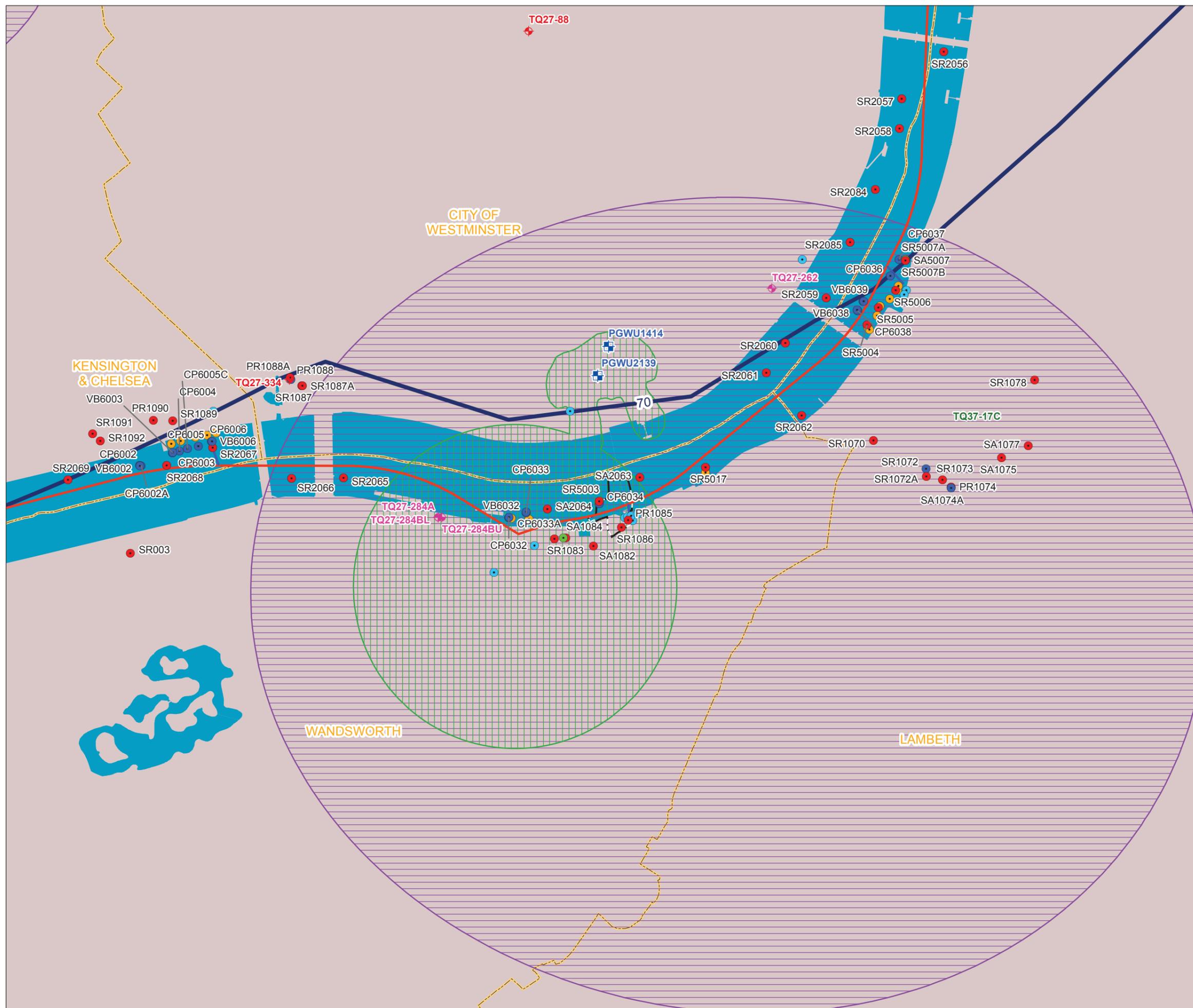
FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

Environmental Statement
Water resources – groundwater - solid geology
Vol.15 Figure 13.4.2
1PL03-WR-20149
January 2013

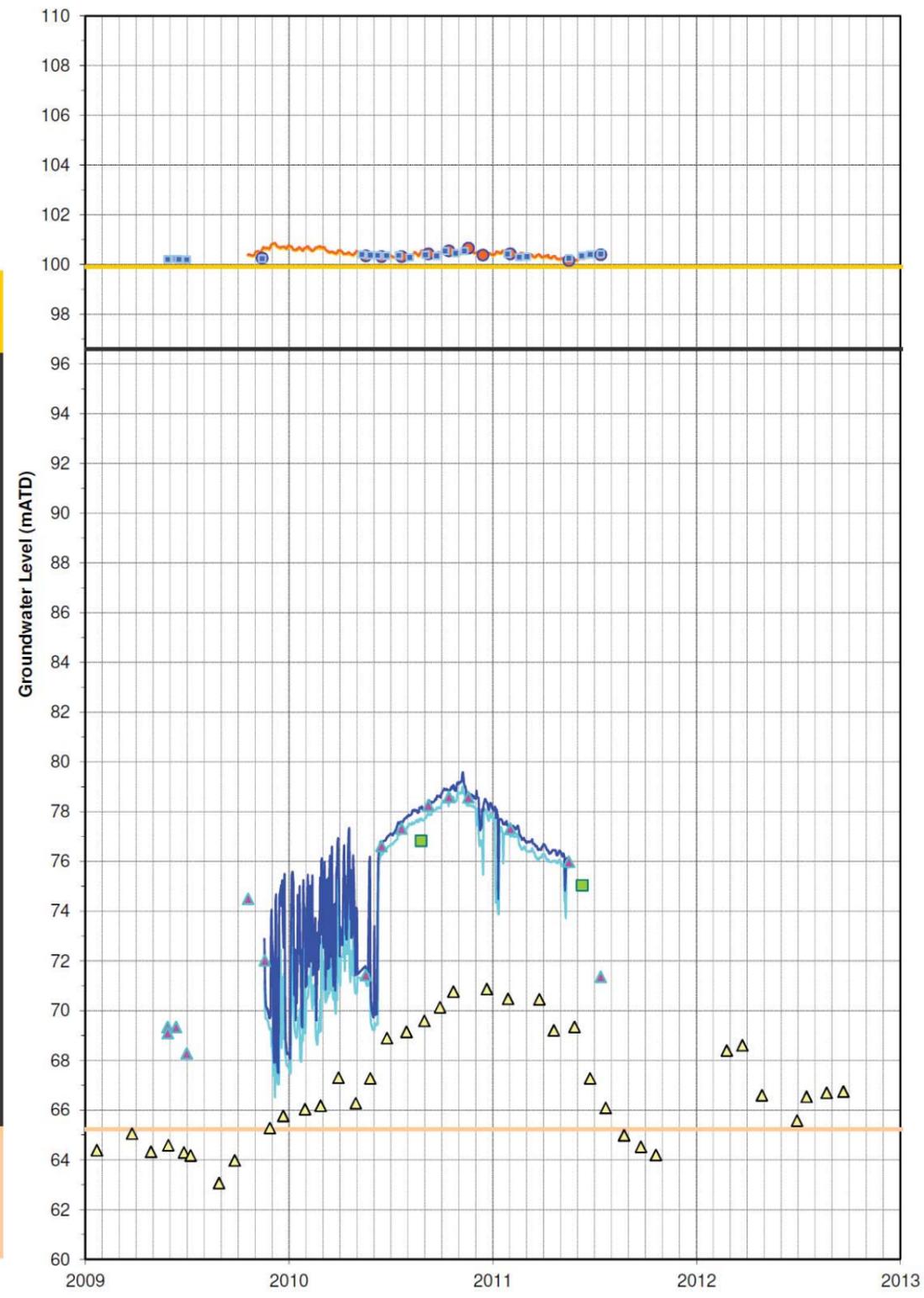


Geology at Shaft Site

Alluvium & River Terrace

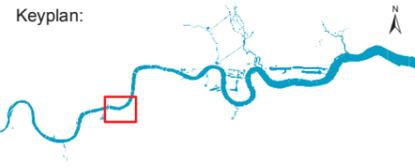
London Clay

Lambeth Group

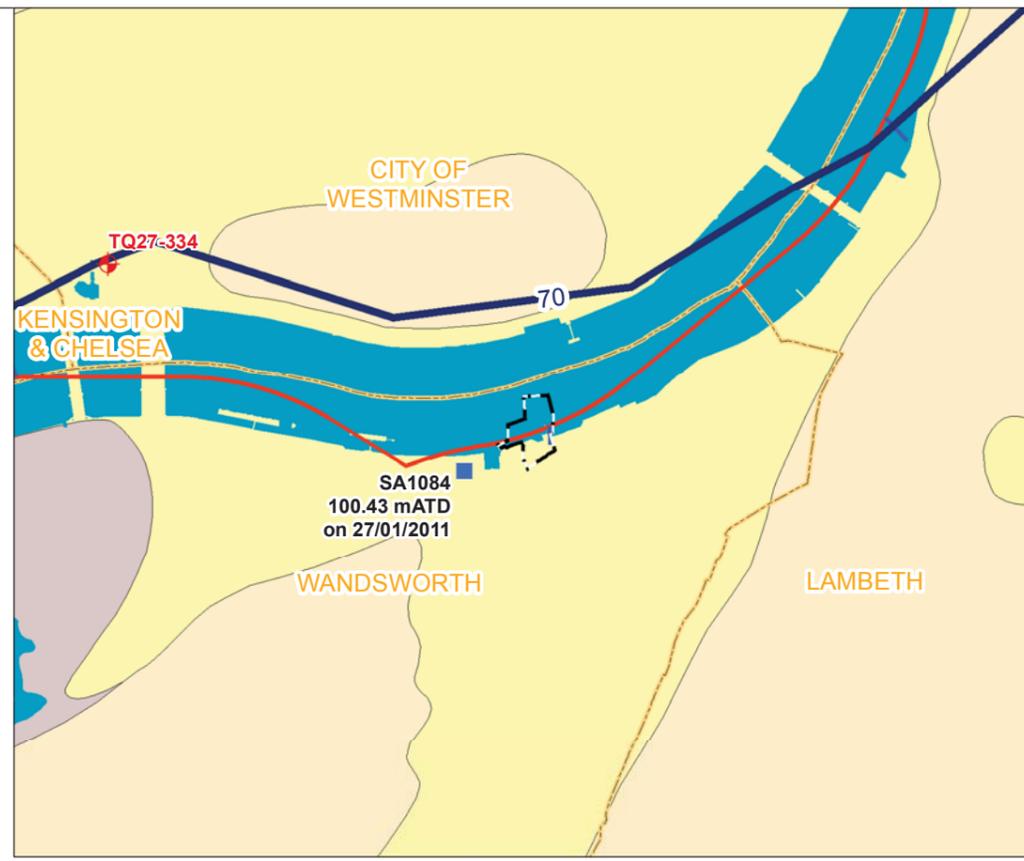
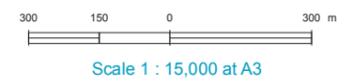


- ▲ PR1081 SCK-B2(Dip)
- SA1082 TSF-SD(Dip)
- SA1084 RTD-SDGR(Dip)
- TQ27/284A
- PR1081 SCK-B2 (daily minimum)
- PR1081 SCK-B2 (daily maximum)
- SA1082 TSF-SD (daily minimum)
- SA1082 TSF-SD (daily maximum)
- ▲ TQ27/334

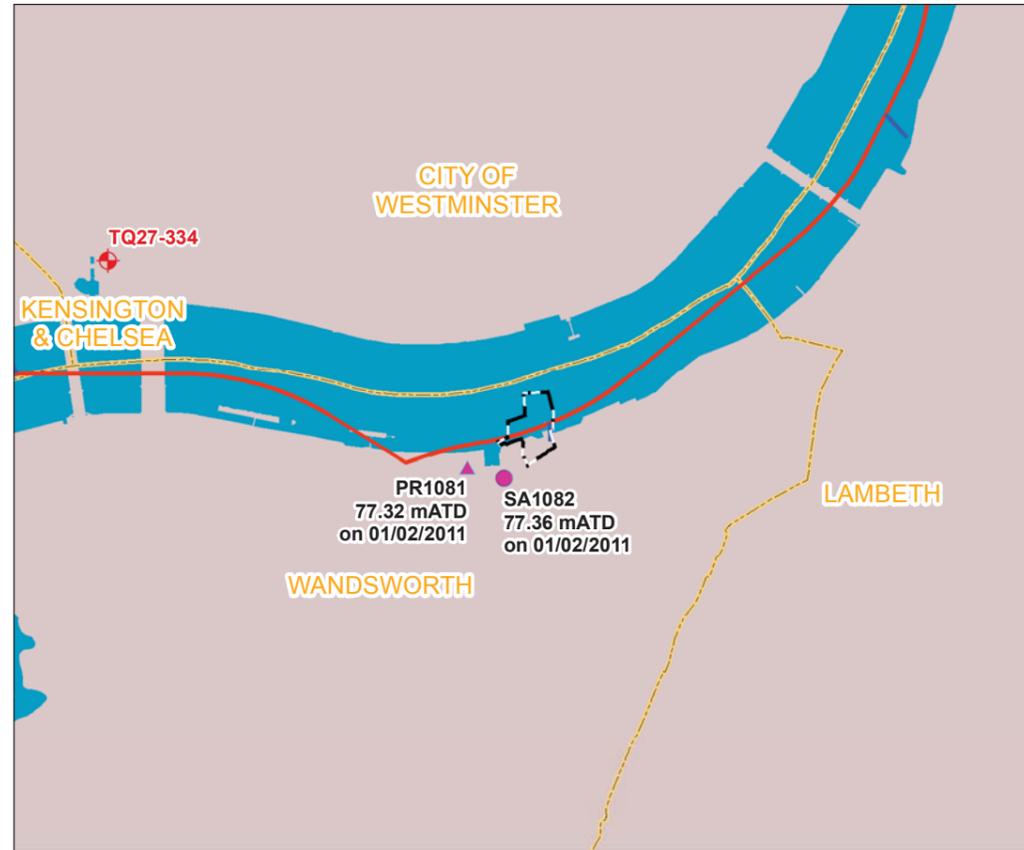
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- Key**
- Limits of Land to be Acquired or Used
 - Thames Tideway Tunnel
 - Main Tunnel
 - Connection Tunnel
 - Local Authority Boundary
 - Drilled Boreholes Upper Aquifer Water Levels
 - SA1084
 - Drilled Boreholes Lower Aquifer Water Levels
 - SR1070
 - ▲ PR1081
 - SA1082
 - EA Groundwater Level Monitoring Locations
 - ◆ Recent
 - EA Chalk Piezometric Level (mATD) - Jan 11
 - Superficial Geology
 - Alluvium
 - Kempton Park Gravel Member
 - Solid Geology
 - London Clay Formation



Upper aquifer monitoring locations



Lower aquifer monitoring locations

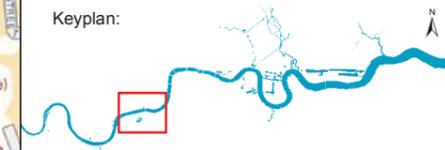
FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Water resources – groundwater - monitoring locations
 Vol.15 Figure 13.4.3
 1PL03-WR-20150
 January 2013



Keyplan:



Key

- Limits of Land to be Acquired or Used
- Automatic Quality Monitoring Station Locations



Scale 1 : 10,000 at A3

FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

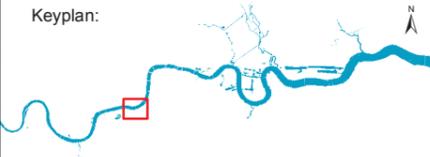
Environmental Statement

Water resources - surface water - water quality monitoring points
Vol.15 Figure 14.4.1

1PL03-WR-21012
January 2013

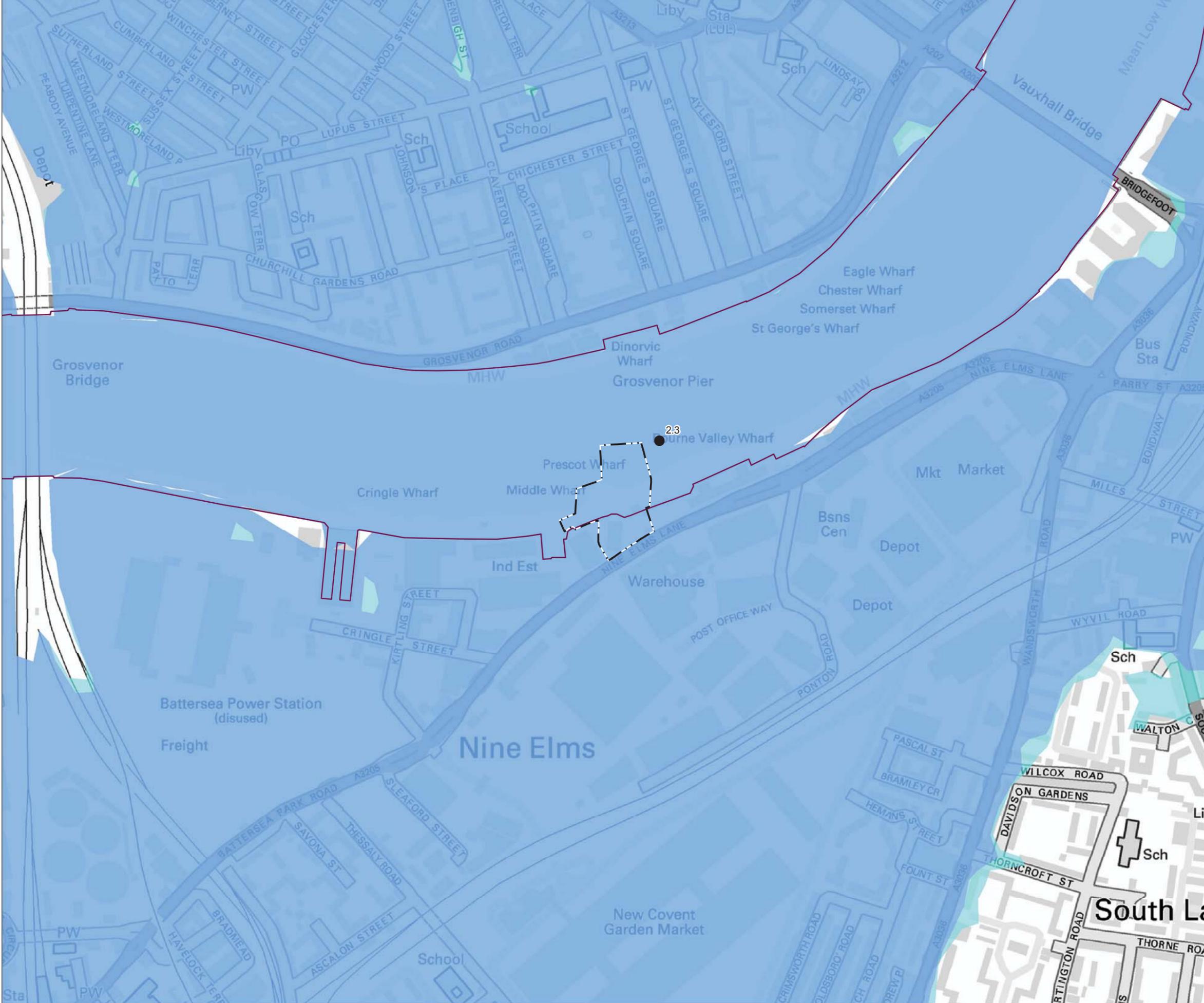
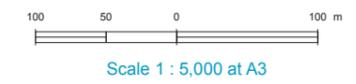


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- Key**
- Limits of Land to be Acquired or Used
 - Water Level Node
 - Thames Tidal Defences
 - EA Flood Zone 3
 - EA Flood Zone 2

Note: Water Level Node - Thames Tidal Joint Probability Extreme Water Levels 2008



FOR INFORMATION

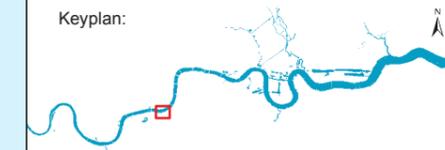
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Flood risk - EA flood zones

Vol.15 Figure 15.3.1
 1PL03-FL-20139
 January 2013

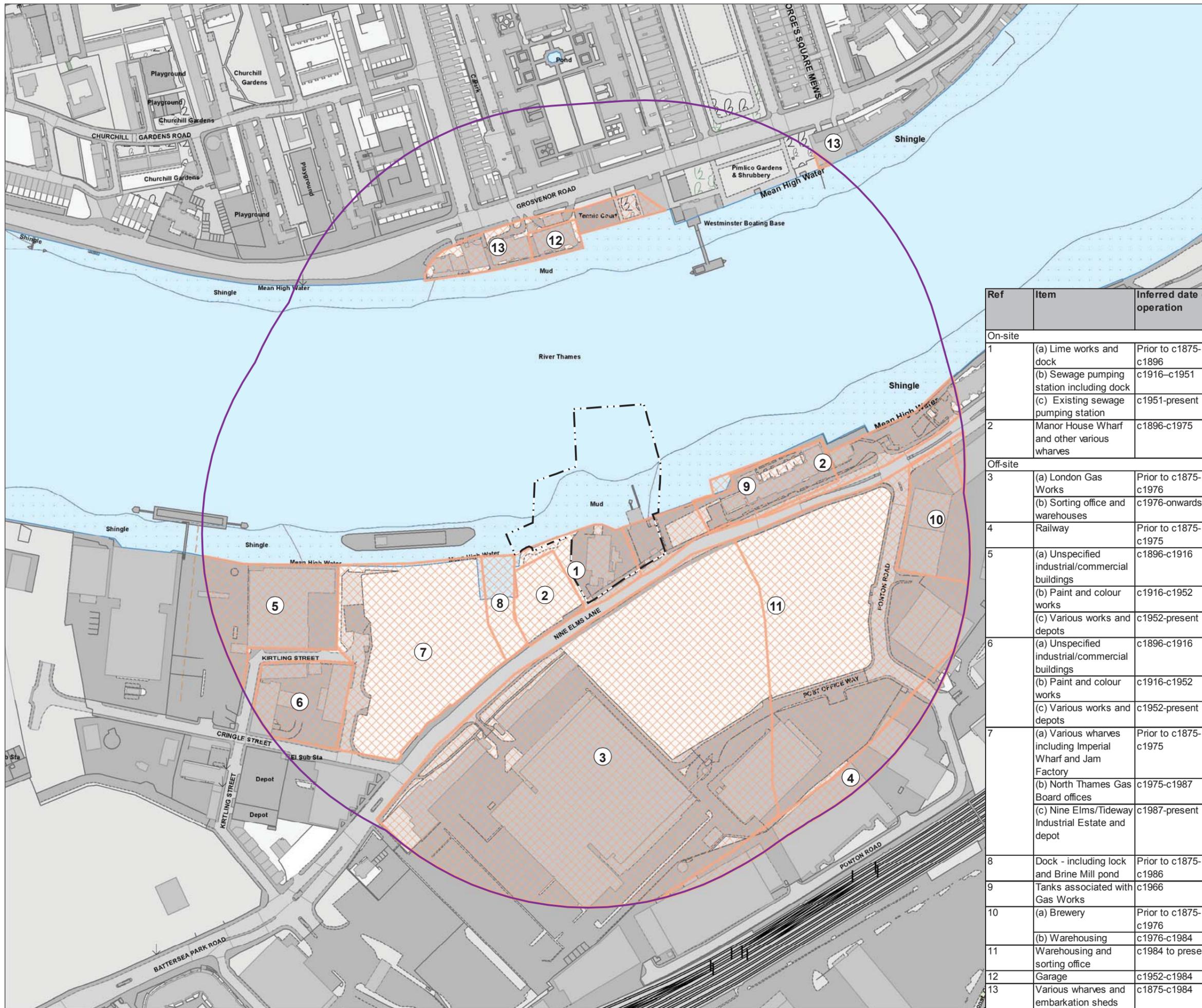


Keyplan:



Key

- Limits of Land
- - - to be Acquired or Used
- Limit of Land 250m Buffer
- ⊠ Potentially Contaminating Land-Uses



Ref	Item	Inferred date of operation
On-site		
1	(a) Lime works and dock	Prior to c1875-c1896
	(b) Sewage pumping station including dock	c1916-c1951
	(c) Existing sewage pumping station	c1951-present
2	Manor House Wharf and other various wharves	c1896-c1975
Off-site		
3	(a) London Gas Works	Prior to c1875-c1976
	(b) Sorting office and warehouses	c1976-onwards
4	Railway	Prior to c1875-c1975
5	(a) Unspecified industrial/commercial buildings	c1896-c1916
	(b) Paint and colour works	c1916-c1952
	(c) Various works and depots	c1952-present
6	(a) Unspecified industrial/commercial buildings	c1896-c1916
	(b) Paint and colour works	c1916-c1952
	(c) Various works and depots	c1952-present
7	(a) Various wharves including Imperial Wharf and Jam Factory	Prior to c1875-c1975
	(b) North Thames Gas Board offices	c1975-c1987
	(c) Nine Elms/Tideway Industrial Estate and depot	c1987-present
8	Dock - including lock and Brine Mill pond	Prior to c1875-c1986
9	Tanks associated with Gas Works	c1966
10	(a) Brewery	Prior to c1875-c1976
	(b) Warehousing	c1976-c1984
11	Warehousing and sorting office	c1984 to present
12	Garage	c1952-c1984
13	Various wharves and embarkation sheds	c1875-c1984



Scale 1 : 3,000 at A3

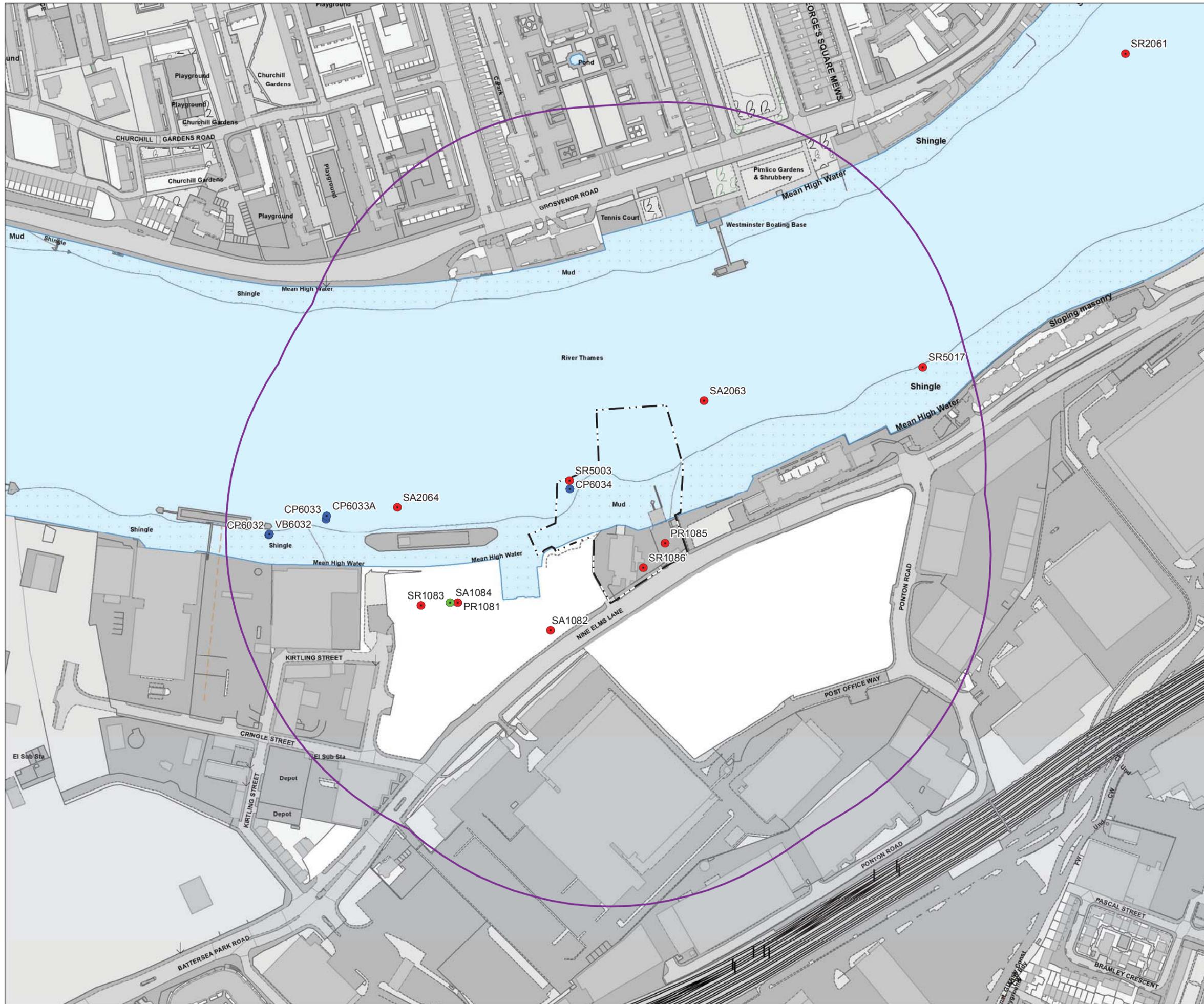
FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement

Land quality - potentially contaminating land-uses
 Vol.15 Figure F.1.1
 1PL03-LQ-30111
 January 2013

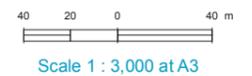




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- Key
- Drilled Boreholes
- Depth (m)
- 0 - 10
 - 10 - 30
 - 30+
- Limits of Land
 - - - to be Acquired or Used
 □ Limit of Land 250m Buffer



FOR INFORMATION

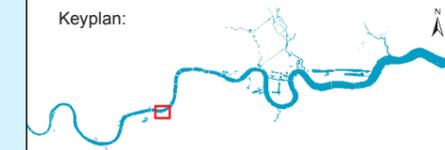
Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Land quality - borehole locations

Vol.15 Figure F.1.2
 1PL03-LQ-30109
 January 2013

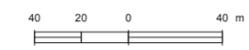


Keyplan:



Key

- Limits of Land
- - - to be Acquired or Used
- ▭ Limit of Land 250m Buffer
- Waste**
- Licensed Waste Management Facilities
- ▲ Past Potential Contaminated Industrial Uses
- Registered Waste Transfer Sites
- ☒ Historic Landfill Sites
- Hazards**
- Pollution Incidents to Controlled Waters
- LA Pollution Prevention & Controls
- ▲ Past Potentially Contaminated Industrial Uses



Scale 1 : 3,000 at A3

FOR INFORMATION

Location

Heathwall Pumping Station
London Borough of Wandsworth

Document Information

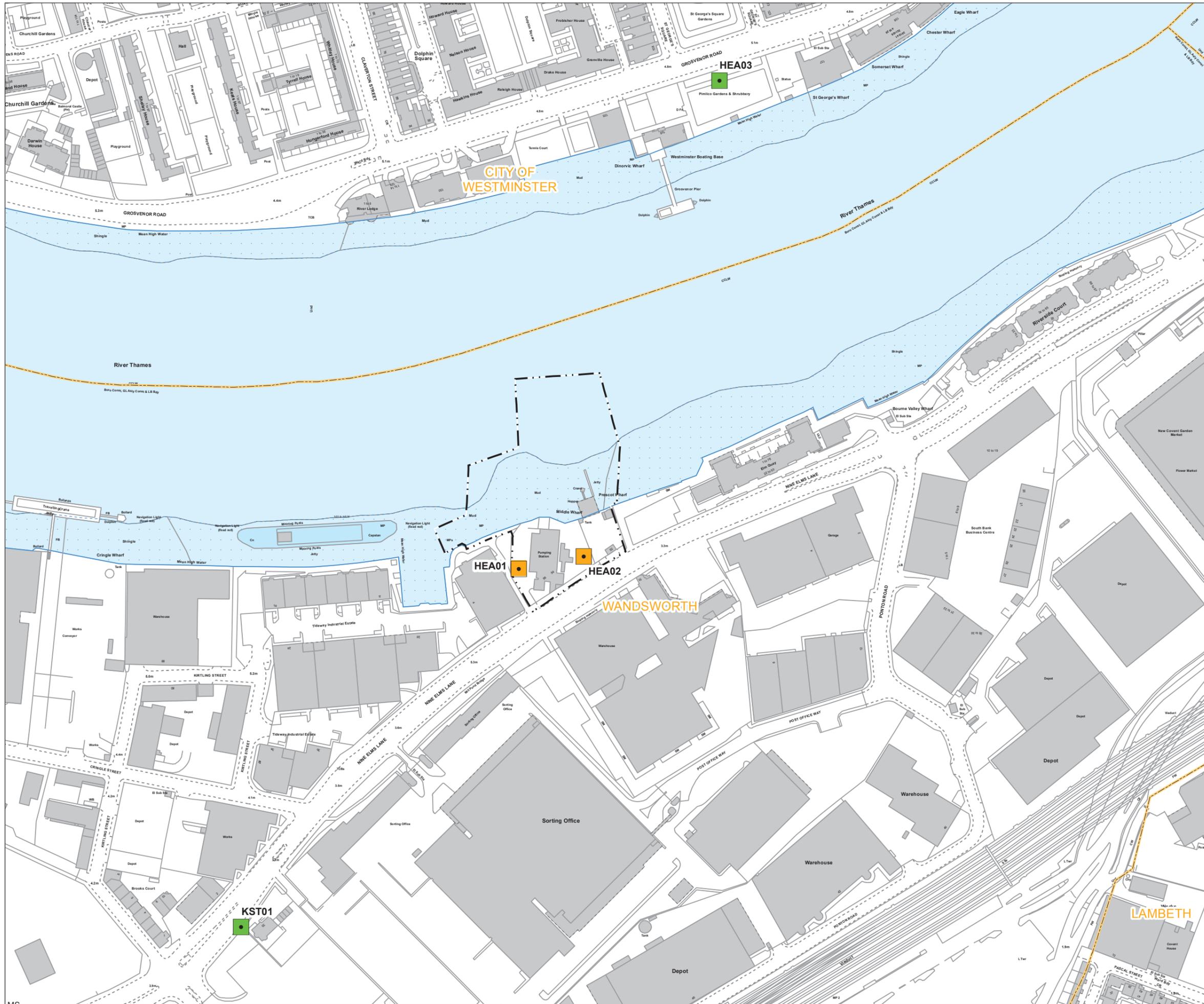
Environmental Statement

Land quality - hazard and waste sites

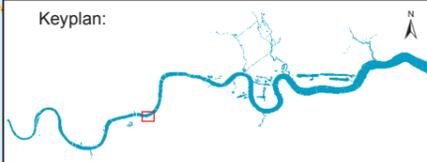
Vol.15 Figure F.1.3

1PL03-LQ-30110

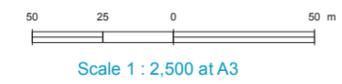
January 2013



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- Key
- Limits of Land to be Acquired or Used
 - Local Authority Boundary
 - Attended
 - Unattended



FOR INFORMATION

Location
Heathwall Pumping Station
 London Borough of Wandsworth

Document Information
Environmental Statement
 Noise and vibration - noise survey locations

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 1PL03-NV-40113
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