

M25 junction 10/A3 Wisley interchange TR010030

6.5 Environmental Statement: Appendix 7.14 Otter and water voles

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Planning Act 2008

Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009



Infrastructure Planning

Planning Act 2008

The Infrastructure Planning (Applications: Prescribed Forms and Procedure) Regulations 2009 (as amended)

M25 junction 10/A3 Wisley interchange

The M25 junction 10/A3 Wisley interchange Development Consent Order 202[x]

6.5 ENVIRONMENTAL STATEMENT:

APPENDIX 7.14 OTTER AND WATER VOLES

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Appendix 7.14 Otter and Water Voles

7.1 Otter and water vole surveys (2018)

7.1.1 Introduction

- 7.1.1.1 Otter (*Lutra lutra*) are a European Protected Species (EPS) subject to full protection under the Conservation of Habitats and Species Regulations 2017 and Schedules 5 and 6 of the Wildlife and Countryside Act 1981 (as amended). They are also listed as a Species of Principal Importance (SPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 (as amended).
- 7.1.1.2 Water vole (*Arvicola amphibius*) are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are listed as an SPI under Section 41 of the NERC Act 2006 (as amended).
- 7.1.1.3 A summary of the relevant legislation can be found in Appendix 7.1.
- 7.1.1.4 Following an initial habitat assessment of the land within and adjacent to the Scheme, it was considered that otter and water vole surveys were required to inform the Environmental Impact assessment.
- 7.1.1.5 Otter and water vole surveys were carried out in April and July 2018.
- 7.1.1.6 This report provides the results of the surveys to determine the presence / likely absence of otter and water vole within and in close proximity to Scheme. An evaluation of the importance of the Site for otters and water voles will be provided in the Environmental Statement (ES) for the Scheme.

7.1.2 Objectives

- 7.1.2.1 The aim of the otter surveys was to determine the presence or likely absence of this species within waterbodies and watercourses up to 100 m from the DCO red line Boundary.
- 7.1.2.2 The aim of the water vole surveys was to determine the presence or likely absence of this species within waterbodies and watercourses up to 50 m from the DCO red line Boundary.

7.1.3 Methodology

- 7.1.3.1 All otter and water vole surveys detailed below have been undertaken in accordance with good practice guidance and CIEEM competencies for undertaking otter¹ and water vole² surveys.

¹ CIEEM (April 2013), Competencies for Species Survey: Eurasian Otter. (https://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/CSS/CSS_-_EURASIAN_OTTER_April_2013.pdf; accessed 01/10/2018).

² CIEEM (April 2013), Competencies for Species Survey: Water Vole. (https://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/CSS/CSS_-_WATER_VOLE_April_2013.pdf; accessed 01/10/2018).

Desk study

- 7.1.3.2 A desk study was conducted in April 2017, which included the provision of records from Surrey Biodiversity Information Centre (SBIC) for otter and water vole up to one kilometre (km) from the Scheme.
- 7.1.3.3 Desk study data was also collected within two km of the Scheme for designated sites citing otter or water vole as a reason for designation.
- 7.1.3.4 Due to a lack of recent otter and water vole records (i.e. within the previous ten years from when the data was requested), a precautionary approach was taken. Therefore, where no records were available within the previous ten years, relevant historic records older than this were considered and included to inform the assessment.

Survey area selection

- 7.1.3.5 All watercourses and water bodies within the otter and water vole study area were identified from multiple mapping sources, including Ordnance Survey (OS) mapping and publicly available aerial imagery.
- 7.1.3.6 Watercourses include rivers, streams, land and roadside ditches, drains, cuts, culverts, dikes, sluices and passages, through which water flows.
- 7.1.3.7 Water bodies are defined as ponds: man-made or natural standing water bodies less than 20,000 m² or 2 ha, or lakes: man-made or natural standing water bodies greater than 20,000 m² or 2 ha.
- 7.1.3.8 The study area for otter and water vole is detailed below:

Otter

- 7.1.3.9 Watercourses have been considered for otter field surveys where the feature is within 100 m of the Scheme³.
- 7.1.3.10 Watercourses have been ruled out where they were isolated from other areas of suitable habitat for otter, such as an isolated waterbody separate and remote from any wider watercourse network or suitable terrestrial site.
- 7.1.3.11 Where suitable otter terrestrial habitat of an area over 1 ha was identified within 100 m of an area of suitable aquatic habitat, and within 100 m of the Scheme³ terrestrial habitat surveys of this area were considered. Suitable terrestrial habitats comprise woodlands, large reedbeds and large areas of scrub⁴ and were identified through a combination of Phase 1 habitat survey data, OS mapping and aerial imagery.

³ 100 m is the minimum protection zone between a known otter breeding site and a development recommended by Scottish Natural Heritage. For shelters, or holts where otters are not breeding, the boundary of the protection zone should be a minimum of 30m. Scottish Natural Heritage (date unknown). Scotland's Wildlife: Otters and Development. Available at: <https://www.nature.scot/sites/default/files/2017-07/A1959316%20-%20Species%20Planning%20Advice%20Project%20-%20otter%20-%20FINAL.pdf>. accessed 01/10/2018). No equivalent guidance has been produced for England.

⁴ Liles G (2003). Otter Breeding Sites. Conservation and Management. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough.

Water vole

- 7.1.3.12 Water bodies were considered for water vole field survey where a waterbody was considered suitable to support water vole within 50 m of the Scheme, or less suitable waterbody which occur within 50 m of a watercourse considered suitable to support water vole, with suitable habitat connectivity between the two features. Examples of barriers to water vole movement include large areas of hard standing and roads. Features have also been ruled out where existing information on the feature shows that it is unsuitable for water vole, such as where a feature is regularly dry.

Field surveys

Otter

- 7.1.3.13 Survey methodology broadly follows the standard survey methodology as set out by Lenton et al (1980)⁵ and as used in the Otter Survey of England⁶.
- 7.1.3.14 All waterbodies were surveyed 250 m upstream and downstream from the closest interaction with the Scheme.

Habitat suitability assessment

- 7.1.3.15 Where watercourses have been ruled in as requiring assessment, an on-site habitat suitability assessment was undertaken by a suitably experienced ecologist) to determine the scope of more detailed otter surveys. The otter habitat suitability assessment of watercourses considered the habitat preferences of otter, specifically:
- Water level (although otter will utilise dry watercourses for commuting);
 - Food supply and variability (varied food types including fish, small mammals and birds to provide year-round foraging resource);
 - Pollutants (particularly those likely to affect prey availability);
 - Low levels of disturbance from people and livestock;
 - Connectivity to other suitable watercourses (including culverts, weirs and high flows impeding otter movement);
 - Level of dense, impenetrable cover (e.g. screens and barriers restricting access to people, livestock, and dogs); and
 - Suitable habitat providing resting/sheltering opportunities (e.g. fallen trees, hollow trees, areas of dense scrub, log piles, stone walls or gabion baskets).

⁵ Lenton, E.J., Chanin, P.R.F. and Jefferies, D.J., 1980. Otter Survey of England 1977-79. Nature Conservancy Council, London

⁶ Crawford, A, 2010, Fifth Otter Survey of England 2009- 2010, Environment Agency, Bristol.

7.1.3.16 Terrestrial habitat site assessments involved a visual inspection assessing habitat based on the following criteria:

- Amount of dense impenetrable cover (e.g. screens and barriers restricting/impeding access to people, livestock, and dogs);
- Food supply in surrounding area based on habitat suitability for prey items (e.g. stocked ponds, amphibian breeding sites, large watercourse with coarse fish); and
- Suitable habitat providing resting/sheltering opportunities (e.g. fallen trees, hollow trees, areas of dense scrub, log piles, stone walls or gabion baskets).

7.1.3.17 During the habitat suitability assessment any water bodies that were dry, isolated and remote from areas of suitable habitat for otter, were ruled out of further assessment. Where habitat was deemed suitable to support otter a detailed survey for field signs was undertaken (see below).

Presence/likely absence surveys

7.1.3.18 Where aquatic or terrestrial habitat was deemed suitable for otter by a suitably experienced ecologist a detailed search up to 250 m up and downstream from the Scheme was conducted. This included surveying for:

- Footprints;
- Spraints;
- Slides/scrapes;
- Anal jelly;
- Feeding remains;
- Hairs;
- Direct observation; and
- Holts/potential holts and other resting sites.

Water vole

7.1.3.19 Survey methodology was undertaken with regard to best practice guidance as set out in Water Vole Mitigation Guidance (Dean et al., 2016)⁷.

7.1.3.20 All waterbodies were surveyed 250 m upstream and downstream from the closest interaction with the Scheme.

⁷ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds. Fiona Mathews and Paul Chanin. The Mammal Society, London.

Habitat suitability assessment

- 7.1.3.21 Where watercourses have been ruled in as needing assessment, an on-site habitat suitability assessment was undertaken by a suitably experienced ecologist (as defined in the CIEEM water vole competency criteria⁸) to determine the scope of more detailed water vole surveys. The assessment considered the habitat preferences of water vole, specifically:
- Dry areas above water level for nesting (burrows or above ground nests);
 - Bank profile (steep banks are preferred, though not essential, as water vole may exploit shallower profiles);
 - Bank substrate suitable for burrowing;
 - Presence, density and type of vegetation on bank and in channel to provide food and cover;
 - Shading of the watercourses (excessively shaded watercourses are of lower suitability);
 - Water level and typical fluctuations; and
 - Water level as a means of escape from predators.
- 7.1.3.22 Following the habitat suitability assessment, any water bodies that were dry, isolated and remote from areas of suitable habitat for water vole were ruled out of further assessment. Where habitat was deemed suitable to support water vole a detailed search for field signs was undertaken (see below).

Presence/likely absence surveys

- 7.1.3.23 Where habitat was considered suitable for water vole, two separate surveys for field signs were undertaken by a suitably experienced ecologist. These surveys were undertaken in different halves of the breeding season, one during mid-April to end of June, and one during July to end of September with surveys being spaced at a minimum of two months apart⁷.
- 7.1.3.24 Surveyors conducted a detailed search up to 250 m up and downstream from the Scheme along the watercourse banksides⁹ for field signs (where access allowed) of water vole including;
- Burrows;
 - Runs;
 - Droppings;
 - Latrines;
 - Prints;

⁸ CIEEM (April 2013), Competencies for Species Survey: Water Vole. Available at: [https://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/CSS/CSS - WATER_VOLE_April_2013.pdf](https://www.cieem.net/data/files/Resource_Library/Technical_Guidance_Series/CSS/CSS_-_WATER_VOLE_April_2013.pdf). accessed 01/10/2018).

⁹ The strip of marginal vegetation at the toe of the watercourses bank extending at least 1 m out into the water and at least 1 m up the bank.

- Hearing distinctive sound of water vole entering water;
- Direct observation; and
- Feeding remains.

7.1.3.25 Only direct observation can be taken as confirming water vole presence, but a combination of other field signs can be suggestive of water vole¹⁰ and has been used to provide a judgement of presence or likely presence of water vole.

Survey details

7.1.3.26 The dates and weather conditions for each survey are presented Table 7.1.1.

Table 7.1.1: Survey details for otter and water vole surveys

Survey Date	Weather description at time of survey	Air temperature (°C)	Wind	Rain	Cloud	Location surveyed
24/04/2018	Dry, sunny and warm	16	2	0	3	Bolder Mere, Guilehill Brook, Manor Pond, River Mole, River Wey and Stratford Brook.
04/07/2018	Sunny and warm	22	0	1	2	Bolder Mere, Guilehill Brook, Manor Pond, River Wey and Stratford Brook.
05/07/2018	Sunny and warm	22	0	1	2	River Mole

7.1.4 Survey limitations

7.1.4.1 During the April and July 2018 otter and water vole surveys, the western bank of Stratford Brook upstream of the A3 could not be accessed due to land access restrictions. Surveys were conducted from the eastern bank, and the western bank was visible during the surveys. Both banks were accessed downstream of the A3, and overall 60-70% of the watercourse was surveyed during the first visit. During the second survey in July, vegetation had overgrown and the watercourse was unable to be surveyed. This is not considered to be a significant limitation due to the scarcity of otter and water vole desk study records in the surrounding areas, and the lack of any otter or water vole field signs at the nearest area of suitable habitat (i.e. Guilehill Brook). As the watercourse is located within the Scheme, as a precaution, updated surveys are recommended prior to construction due to the potential for otters and water voles to colonise new areas.

¹⁰ Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016) *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds. Fiona Mathews and Paul Chanin. The Mammal Society, London.

- 7.1.4.2 Due to land access restrictions, approximately 40% of Guileshill Brook was surveyed. At its closest point to the Scheme, the watercourse was surveyed 250 m downstream, but access was not permitted for upstream. During the habitat suitability assessment, the watercourse was identified as only being suitable for otters, and not suitable for water voles. This is not considered to be a significant limitation as the watercourse is located close to the proposed Nutberry farm compound. Therefore, should any otters be present within Guileshill Brook they would not be affected by the works.
- 7.1.4.3 Due to health and safety reasons (risks to surveyors working on unstable bank sides), access to both banks of the River Mole was not possible. During the second survey (05/07/2018) the dense vegetation including Himalayan balsam prevented access to sections the watercourse. Dense vegetation has the potential to restrict visibility of field evidence which may result in some evidence not being recorded. Overall approximately 50% of the watercourse was surveyed. This is not considered to be a significant limitation as the River Mole is adjacent to the replacement land at Chatley Wood, and this site is only undergoing habitat enhancement works, and no enhancement works are proposed to the River Mole. Therefore, should any otter or water voles be present within the River Mole, they would not be affected by the proposed enhancement works within the enhancement area.
- 7.1.4.4 During the second survey of the River Wey, dense Himalayan balsam limited the amount of bank accessible. Overall approximately 60% of the watercourse was surveyed. Dense vegetation has the potential to restrict visibility of field evidence which may result in some evidence not being recorded. This is not considered to be a significant limitation as the River Wey is adjacent to the replacement land at Park Barn, and this site is only undergoing habitat enhancement works, and no enhancement works are proposed to the River Wey. Otters were confirmed present during the field sign surveys, and as a precaution updated surveys are recommend prior to works commencing.

7.1.5 Results

Desk study

- 7.1.5.1 There were no records of otter or water vole within 1 km of the Scheme in the past 10 years¹¹ that were returned from the desk study.
- 7.1.5.2 One historic record of otter was provided for a location at approximately TQ 06 59 in 2005, 940 m southwest of the Scheme near the River Wey, and one water vole recorded at approximately TQ 06 58 in 1986 approximately 500 m northwest of the Scheme near Stratford Brook.
- 7.1.5.3 In addition, River Wey-Working (not including Pryford Place Lake) Site of Nature Conservation Importance (SNCI) is identified in the desk study as supporting a population of water vole. The SNCI is approximately 450 m to the north-west of the Scheme at the Nutberry Fruit Farm compound.

¹¹ Prior to the search date of 2017

Habitat suitability assessments

- 7.1.5.4 The results of the habitat suitability assessments are presented in Table 7.1.2.

Field surveys

- 7.1.5.5 The results and approximate percent coverage of all surveys undertaken are present in below. The locations of the watercourses and waterbodies can be found in Figure 7.19.

Table 7.1.2: Habitat suitability assessments results

Watercourse name	Watercourse description and habitat type	Central OSNGR	Distance from the Scheme	Otter scoping decision	Water vole scoping decision	Scoping justification
Bolder Mere	Large lake within common land comprising of heathland and plantation woodland.	TQ 075 583	Partially within the Scheme	In	In	
Guilehill Brook	Small stream within woodland.	TQ 056 573	Partially within the Scheme	In	Out	Suitable for otter only. Small stone substrate brook, heavily shaded, shallow with little to no emergent/ bankside vegetation unsuitable for water vole.
Manor Pond	Large lake within woodland stocked with fish.	TQ 094 608	Partially within the Scheme	In	In	
River Mole	Large river with high sided banks. Numerous trees have fallen and/or are leaning into the river.	TQ 088 595	Adjacent to the Scheme	In	In	
River Wey	Large river with a small area of adjoining woodland.	TQ 072 601	Adjacent to the Scheme	In	In	
Stratford Brook	Small stream within a habitat widely comprising scrub.	TQ 064 574	Adjacent to the Scheme	In	In	
Pond Farm south ditch	Ditch within woodland that is frequently dry.	TQ 073 584	Adjacent to the Scheme	Out	Out	Ditch which is only wet during prolonged periods of heavy rain. The ditch is isolated from any suitable connecting habitat by the A3.

Watercourse name	Watercourse description and habitat type	Central OSNGR	Distance from the Scheme	Otter scoping decision	Water vole scoping decision	Scoping justification
Adjacent A3 ditch	Ditch immediately adjacent to the A3 that dries semi-annually.	TQ 073 582	Partially within the Scheme	Out	Out	The ditch is immediately adjacent to the A3 and a pedestrian footpath, and it subject to a high level of disturbance from the road. Lack of suitable bankside or emergent vegetation within or along the watercourse, and poor water quality.

Table 7.1.3: Survey results

Watercourse name	Total % of entire area surveyed	First survey date (otter and water vole)	Second survey date (water vole only)	Otter survey results	Water vole survey results
Bolder Mere	80-90% of waterbody edge surveyed, boggy areas prevented access to entire waterbody edge.	24/04/2018	04/07/2018	Habitat suitable, no evidence found.	Habitat suitable, no evidence found.
Guilehill Brook	40% of waterbody accessed due to land access restrictions.	24/04/2018	04/07/2018	Habitat suitable, no evidence found.	Habitat unsuitable, ruled out from further surveys.
Manor pond	90% of waterbody surveyed, Dense scrub prevented access to entire waterbody edge.	24/04/2018	04/07/2018	Toad feeding remains recorded during survey. Unlikely to be otter as they appear to have been eaten more delicately, rather than consumed in larger parts and skinned, which would have been expected as that is more typical otter behaviour.	Habitat suitable, no evidence found.

Watercourse name	Total % of entire area surveyed	First survey date (otter and water vole)	Second survey date (water vole only)	Otter survey results	Water vole survey results
River Mole	50% of watercourse surveyed. Only western bankside is accessible due to land access restrictions. Banks are steep and access to the water margin would be dangerous, in the most part. Dense vegetation including Himalayan balsam and steep undercut river banks prevented access to the watercourse.	24/04/2018	05/07/2018	Scratch marks and small round impressions in bankside substrate recorded, but without any other confirmatory evidence unable to confirm if otter. Potential resting site beneath fallen tree present on bankside. Cavity present that extends back approximately half a metre from the bankside. No evidence identified in the proximity of the feature.	Habitat suitable, no evidence found.
River Wey	51-60% accessible. Land access restrictions only allowed survey of south bank. Banksides were steep and unsafe to survey completely. On the second visit, dense Himalayan balsam now limits the amount of bank accessible.	24/04/2018	04/07/2018	Regularly used territorial sprainting site. Up to 10 spraints on tree overhanging river. Age of spraints from old to recent.	Habitat suitable, no evidence found. A number of mink prints recorded within bankside substrate.
Stratford Brook	60-70% accessible during first visit, 0% accessible during second visit due to dense vegetation preventing any bankside access. Land access restrictions prevent survey on Wisley airfield side. River depth and steep banksides prevented channel access for the most part.	24/04/2018	04/07/2018	Habitat suitable, no evidence found.	Habitat suitable, no evidence found.

7.1.6 Discussion

- 7.1.6.1 Otter and water vole surveys were conducted in April and July 2018 at six watercourses and water bodies located within and adjacent to the Scheme.

Otter

- 7.1.6.2 One watercourse, the River Wey, had confirmed otter presence recorded during the surveys. Due to the only evidence recorded being a territorial spraint site located 180 m east from the Scheme, with no resting or breeding sites recorded, it is likely that otter are only using the watercourse for commuting purposes. The River Wey is immediately adjacent to the Scheme at Park Barn replacement land.
- 7.1.6.3 The River Mole had possible evidence of otters (scratch marks and small round impressions in bankside substrate recorded) which the surveyors were unable to confirm as otter without any other confirmatory evidence.
- 7.1.6.4 No confirmed evidence of otter was recorded at any of the other watercourses.
- 7.1.6.5 In the 'fifth Otter Survey of England' between 2009 and 2010, otters were recorded for the first time within the Wey catchment at two of the 23 sites surveyed. No otters have been recorded in the Mole catchment during the Otter surveys of England. However, otter populations are increasing, and their distribution is spreading across southern England.
- 7.1.6.6 As all the watercourse are linked, it is assumed that otters will make occasional use of all suitable watercourse at present or within the near future.

Water vole

- 7.1.6.7 No evidence of water vole was recorded at any watercourses or water bodies during the surveys.
- 7.1.6.8 Full access to the whole of the survey area was not possible at each watercourse and waterbody due to land access restrictions and accessibility (i.e. dense vegetation, unsafe banks). However, all the sections of the watercourses and water bodies within and adjacent to the Scheme were surveyed, except for the upstream section of the River Mole. As the River Mole is adjacent to the replacement land at Chatley Wood, any water voles present within the River Mole would not be adversely impacted by construction works.
- 7.1.6.9 Due to the absence of water vole evidence during the surveys, water vole are considered to be likely absent from the Scheme and the immediately surrounding area.

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