

# **M25 junction 28 improvement scheme**

## **TR010029**

### **6.3 Environmental Statement**

#### **Appendix 7.15: Otter and water vole survey**

APFP Regulation 5(2)(a)  
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

#### M25 junction 28 scheme Development Consent Order 202[x ]

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#### 6.3 ENVIRONMENTAL STATEMENT 7.15: OTTER AND WATER VOLE SURVEY

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# **Appendix 7.15 Otter and water vole survey**



# Report



## Otter and Water Vole Survey Report: Junction 28 M25

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## Quality Assurance

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## Revision History

Revision	Date	Amendment

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# 1 Introduction

## 1.1 Background and Survey Objectives

ADAS were commissioned by Atkins to undertake a suite of ecological surveys of an area of land adjacent to Junction 28 of the M25. The land is proposed to be re-developed as part of improvement works to the junction which Highways England will be undertaking. Surveys for otter (*Lutra lutra*) and water vole (*Arvicola amphibius*) were undertaken in June 2017, September 2017 and May 2018 and this report documents their findings.

# 2 Methodology

## 2.1 Desk Study

Biological records for the Scheme were obtained from Greenspace Information for Greater London (GIGL), Essex Records Centre (ERC) and Essex Field Club (EFC) in 2017 and updated in September 2019 to identify if any otter or water vole have been recorded within 2km of the DCO boundary.

## 2.2 Field Survey

The Survey Area for water vole and otter was determined based on the land within the DCO boundary subject to impacts during construction and operation of the Scheme. The area subject to impacts is the land north west of Junction 28, where the new loop road will be constructed. Outside of this area, there are temporary works associated with the gas main diversion south of the A12 (west of junction 28). All other works within the DCO boundary are limited to the existing carriageway of the A12 and M25 (e.g. replacement of signs on existing gantries). Therefore, the Survey Area was extended 1km up and downstream of the land subject to impacts during construction (where access was permitted).

The two watercourses were inspected on 25<sup>th</sup> May 2017 by ADAS ecologists (lead surveyor experience in Annex 1) on the 27<sup>th</sup> September 2017 and 9<sup>th</sup> May 2018. The water vole survey followed the standard guidance as set out in the Water Vole Conservation Handbook (Dean *et al* 2016). It was assessed for their potential to support water voles, and if deemed suitable, a water vole survey of the watercourse was carried out to search for any signs of this species including droppings, burrows, latrines, feeding remains and footprints.

The survey also searched for signs of otter, including otter holts. In addition, camera traps (remotely activated camera equipped with a motion, infrared or light beam sensor as a trigger) were installed along both watercourses from the 3<sup>rd</sup> September and the 27<sup>th</sup> October 2017 to identify if otter were moving along the watercourses. Surveys were undertaken in accordance with methodology by Chanin (2003a and 2003b).



## 2.3 Limitations

The otter and water vole survey did not cover the full site extent as shown by the DCO boundary in Figure 1 due to access restrictions to the north (under the M25) and health and safety issues to the south-west (beyond the A12 where water got too deep). The water became too deep to survey in waders approximately 300m to the south west of the Ingrebourne River, south of the A12. The full extent of the surveyed watercourses is shown in Annex 2. Access to the watercourse south of the A12 was gained in early 2018 and subsequently surveyed in May 2018. Despite these access limitations, each of the three surveys covered the lengths of the watercourses where construction impacts are anticipated within the DCO boundary.

The surveys were undertaken at the optimal time for otter and water vole surveys and within periods without rain so any signs of these species such as latrines or spraints would be visible.



**Figure 1: DCO boundary highlighted in red (ADAS general mapping tool 2019)**

## 3 Results

### 3.1 Desk Study

There were two records of an otter sighting from ERC on the Ingrebourne River in 2014, within 2km of the DCO boundary, the location of these records are shown on the figure in Annex 2. The two records are approximately 350m and 750m south of the DCO boundary.

ERC have a record of water vole from 2011, 1.2km at Harold Wood, to the west of the DCO boundary Scheme. GIGL have record of water vole in 2017, with the closest recording 37m to the north (exact location not provided within the records), however this record might coincide with the Essex Field Club, 2007 record, of water voles located in Firs Wood to the north of the DCO boundary (Annex 2).

### 3.2 Field Survey

No signs of water vole were recorded during any of the survey visits. A burrow (Photograph 1, Annex 3) was recorded on the Weald Brook near its confluence with the Ingrebourne River (grid reference TQ5643992222). However, no other evidence of water voles was recorded and as such it is considered likely that the hole was made by either rats or signal crayfish (*Pacifastacus leniusculus*) which have been recorded in the watercourses. In May 2018 approximately 10 burrows were recorded south of the A12, south of the DCO boundary, which were consistent with that of signal crayfish.

No evidence of otter holts were recorded within the Survey Area. However a single, old otter spraint (Photograph 2) was recorded on the Ingrebourne River during aquatic invertebrate surveys on 23<sup>rd</sup> August 2017, at grid reference TQ 56629 92350, which was located under the bridge which exits Grove Farm on the slip road off the A12. The camera traps did not identify any sightings of otters using the brooks.

Three bridges on the A12 and M25 were inspected for signs of otters and water vole. Prints were identified under the A12 on mud contained under the bridge where the Ingrebourne and Weald brook came together (Photograph 3). Although not perfectly formed they appeared to be those of fox (*Vulpes vulpes*) (Photograph 4); fox was also repeatedly recorded on the camera traps set out between September and October.

Weald Brook has been heavily impacted by deer crossing the watercourse and the banks were predominantly devoid of vegetation due to shading from trees (Photographs 5 and 6). There was also no in-channel aquatic vegetation. In addition there was a lot of undermining of the banks associated with variations in water levels. Areas of scrub were present along its length which could provide suitable shelter for otters. Weald Brook provides suitable commuting habitat for otters due to its connectivity to other watercourses.

The Ingrebourne River located within the DCO boundary just north of the A12 was considered to be more suitable for water voles than the Weald Brook, with bank vegetation suitable for providing a foraging source (Photograph 7). However bank profiles were typically shallow which was less suitable for the creation of burrows. In addition an extensive box culvert (over 100m in length) is present where the watercourse flows under the M25 Junction 28. This box culvert was likely to restrict movement of water voles. A stretch of the Ingrebourne River immediately south of Oak Farm (south of A12) measuring approximately 20m in length supported sedge habitat typically required to support foraging water vole.

## 4 Conclusion

The surveys undertaken in May 2017, September 2017 and May 2018 did not identify the presence of either otter or water vole in the Survey Area. However, an otter spraint was recorded on the on the Ingrebourne River during aquatic surveys in August 2017. Subsequent monitoring by camera trap in September and October 2017 did not record any otter movement along the watercourse at that time.

Both watercourses were considered suitable habitat to support commuting otters due to their linkages to other waterbodies and access provided by a bridge under A12 and the box culvert under the M25 provided a suitable commuting route except when the watercourse are in flood. Both the Weald Brook and Ingrebourne River are both known to support fish and crayfish species which are suitable as prey for otters. Suitable holt habitat was also present along both watercourses although the the section of the Ingrebourne River that flows to the north of the A12 is to be less favourable to provide a holt due to noise and visual disturbance.

Due to the impact of fallow deer crossing the brook, the banks of Weald Brook within the Survey Area are considered to be unsuitable for supporting water voles. In addition there was a lack of food source as a result of shading from trees along the brook. As such Weald Brook is considered to be sub-optimal for water voles.

Based on the biological records that identify the presence of water voles in close proximity to the DCO boundary within the last two years, it is considered that there is the potential for water voles to colonise the Weald Brook and the Ingrebourne River . However, there are very few records of water voles in the wider area indicating that a meta-population does not exist in the area that could quickly colonise these watercourses within the DCO boundary. In addition, the presence of large culverts and bridges is likely to restrict the movement of this species into areas of suitable habitat, including that within the DCO boundary.

## 5 References

**Dean, M., Strachan, R., Gow, D., and Andrews, R (2016).** The Water Vole Mitigation Handbook (The Mammal Society Mitigation Series).

**Chanin, P (2003a).** *Ecology of the European Otter. Conserving Natura 2000 Rivers*, Ecology Series No. 10. English Nature, Peterborough.

**Chanin, P (2003b).** *Monitoring the Otter Lutra lutra. Conserving Natura 2000 Rivers Monitoring Series No 10.* English Nature, Peterborough.

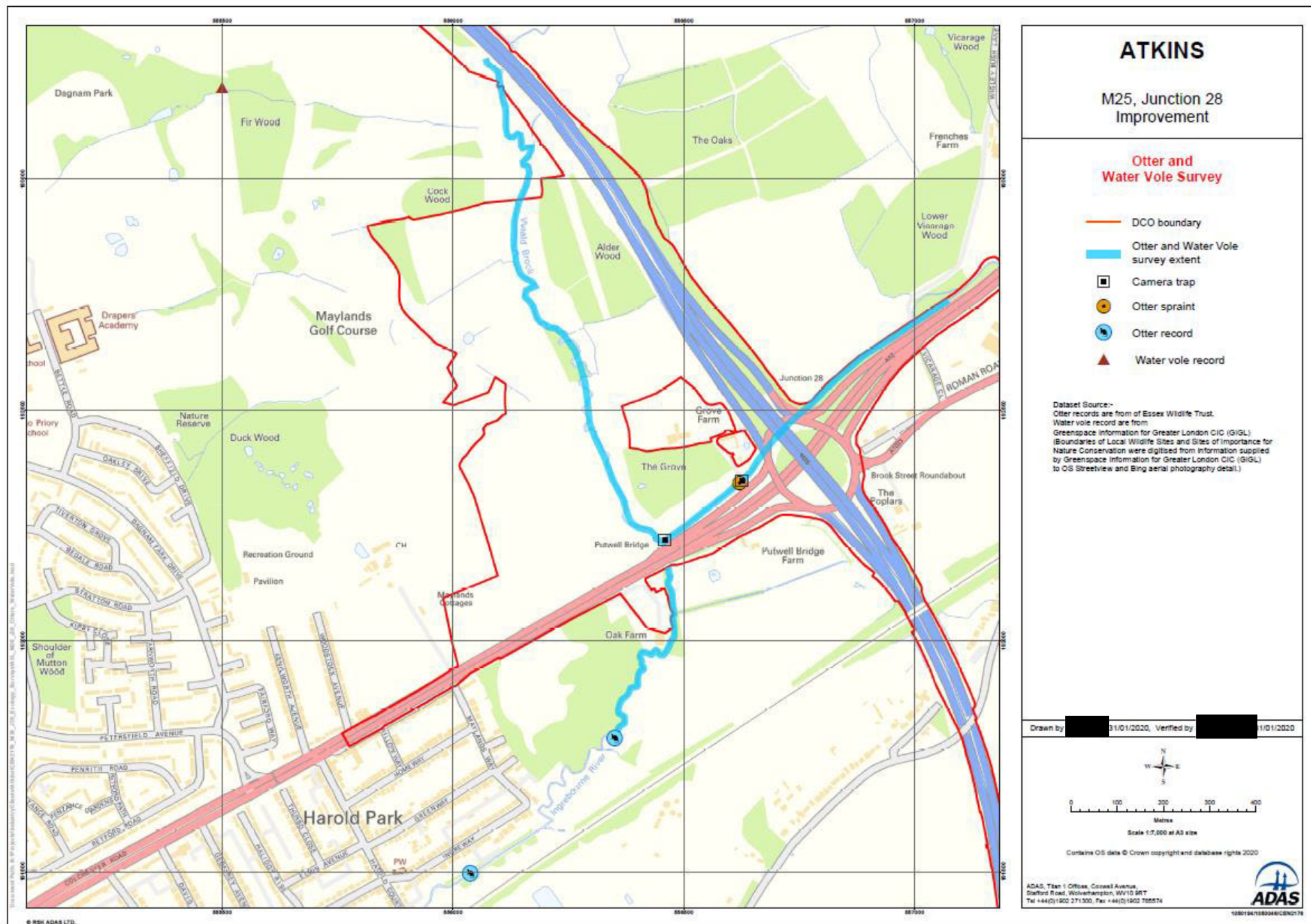


## Annex 1: Lead surveyor experience

The lead surveyor has extensive experience of managing issues relating to water voles and otters. The surveyor has been surveying for these species for approximately 12 years within the field of consultancy. The surveyor has also undertaken a number of displacement projects for water voles, developing the strategy and then implementing it on site through supervision and on-site support. .

## Annex 2: Otter and Water Vole Survey Map

See following page





## Annex 3: Photographs



Photograph 1: Burrow recorded on Weald Brook, likely to be rat or signal crayfish.



Photo 2: Otter spraint recorded on River Ingrebourne.



Photo 3: Road bridge at the point where the River Ingrebourne and the Weald Brook come together.



Photo 4: Probable fox prints recorded under the bridge of the A12.

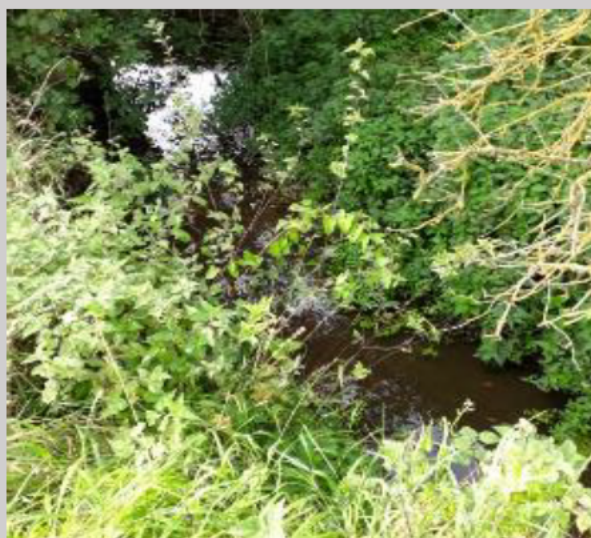




Photograph 5: Weald Brook (damage from fallow deer shown at front of photo)



Photograph 6: Weald Brook



Photograph 7: River Ingrebourne

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