

THE CHILTERN RAILWAYS (BICESTER TO OXFORD) IMPROVEMENTS ORDER

TRANSPORT AND WORKS ACT

CHILTERN RAILWAYS' POSITION STATEMENT

ON NATURAL ENGLAND'S OBJECTION IN RELATION TO

BATS AT WOLVERCOT TUNNEL

1 Introduction

- 1.1 This position statement sets out Chiltern Railway's position reached in relation to Natural England's ("NE") Written Submission (**OBJ/246/4**) of 2 November 2010 which relates to the likely effects on bats at Wolvercot Tunnel of the construction and operation of the Order Scheme. NE included the Chiltern Railways' Bat Mitigation Plan Version 2, on which it commented in **OBJ 246/4**, as an Appendix to **OBJ 246/5**, 24 November 2010.
- 1.2 In their submission NE state that they have "two major concerns in relation to impacts on bats:
- preserving the roosting opportunities within the tunnel (including the ability of the bats to reach the roost); and
 - preventing bat mortality."
- 1.3 These issues and the detail of NE's submissions are addressed in turn in the following sections.

2 Preserving Roosting Opportunities

- 2.1 CRCL can confirm that all the drain holes in the tunnel which have been found to support roosting bats during the surveys will be retained.
- 2.2 There are additional cracks and crevices in the tunnel which have on occasions been found to support roosting bats. Structural investigation works surveys were undertaken by Bam Nuttall for CRCL on 25 and 26 October 2010. The undertaking of these investigations was informed by bat specialists from Greena Ecological Consultancy and they were carried out in a manner which did not affect the bats and hence did not require a licence from NE. The bat specialists were present on site at

the start of the works to advise on the location of equipment (eg generators) so that it would not disturb the bats.

- 2.3 The results of the investigations revealed that none of the existing cracks and crevices will need to be filled to maintain the structural integrity of the tunnel. All those which are considered to provide roosting opportunities for bats will be retained. In addition CRCL will create 5 new crevices on the high arch of the inner tunnel roof to provide additional roosting opportunities for bats within the tunnel. These new crevices will also provide opportunities for bats to take shelter if lights (see 4.11 below) are required to avoid the risk of casualties being caused by moving. They will also allow commuting / foraging bats to shelter if lights are used. The crevices will therefore be designed to accommodate the above requirements, such that in addition to providing additional roosting opportunities, they will also be deep enough to allow bats to shelter from the lights and from passing trains. The detailed design and locations of the new crevices will be agreed with NE.

3 Ability of Bats to Reach Roost Sites

- 3.1 The construction of the Scheme may affect the ability of bats to reach roost sites in the following ways:

- construction work in the tunnel during the daytime may require bats to be temporarily excluded from their tunnel roost sites;
- construction work at night outside the tunnel entrances may prevent bats moving to and from their roosts;
- The operation of the scheme may alter air flows due to the trains passing through the tunnel at higher speeds than present. A suggestion has been made by Natural England that this could prevent bats accessing their roosts and cause collisions by turbulence.

- 3.2 Each of these issues is discussed in the following sections.

Construction Work in the Tunnel

- 3.3 CRCL can confirm that construction works including piling and tunnel repair work will be undertaken during the period April to October, and will therefore avoid the bat hibernation period. It is anticipated under the present programme that these works will commence in spring 2012. It is possible that some of these works may be carried out in the spring of 2011 where they are activities that Network Rail would be undertaking in any event, irrespective of the Scheme. Should any of these works affect bats and require licences they will be applied for from Natural England.

- 3.4 Works within the tunnel will be undertaken during daylight hours wherever reasonably practicable, so as to avoid effects on the movement of bats through the tunnel at night. Daytime working is could result in some disturbance to bats roosting in the tunnel, and may even cause them to be flushed from their roosts, if subject to direct disturbance such as lighting, fumes or activity in the immediate vicinity of a roost crevice. Accordingly, in preparation for these works, CRCL will erect 20

Schwegler bat boxes along the railway embankments outside the tunnel as soon as possible. This will allow the bats time to find these alternative roost sites before any construction work commences. These boxes will be placed within 250 m of the tunnel entrances, although not within 50 m of the northern tunnel entrance, as this area suffers from light spill from nearby street lights. Sites next to road bridges will also be avoided for similar reasons. The boxes will be at least 2.5 m above the ground. Boxes will be grouped in threes on each tree, each box facing a different direction in order to maximise the thermal range available to roosting bats. The boxes will be retained in situ after construction work has been completed to provide a permanent enhancement to the wider habitat

- 3.5 Prior to these works commencing, bats will be excluded from the roosts (under licence from NE) using bat exclusion tubes (>200mm long sections of 32mm diameter pipe) which allows the bats to exit the roosts but not re-enter them. These tubes will remain in place for the duration of the construction works in the tunnel. The bats will be able to use the bat boxes which have been erected as alternative roosts during this period, and then return to the tunnel roosts once the works have been completed.

Construction Works Outside the Tunnel

- 3.6 Where night time work is required within the tunnel, this will be restricted and will not be continuous throughout the night. For example, works will be programmed to exclude activities during both the dawn and dusk on any one night. By this means, where works need to take place during the night, there would remain a period of several hours during the night during which works would not take place, thus allowing bats to commute through the tunnel.
- 3.7 Where track works are required outside the entrances to the tunnel at night, when no work is being undertaken within it, this could also result in illumination of the tunnel entrances which may deter bats from using it. CRCL has commissioned a lighting expert to assess the current light levels at the tunnel entrances. These existing light levels will then be used to inform the distance from the tunnel entrances at which work could occur at night whilst maintaining existing light levels. If works are required closer to the tunnel entrances at night that would exceed the existing light levels, then further mitigation measures will be implemented. These will include the provision of a screen to prevent light from entering the tunnel and from illuminating the entrances. An area of at least 25m from each tunnel portal will be maintained at current light levels.
- 3.8 Oxfordshire County Council, as Highway Authority will be consulted regarding the possible reduction of light spill from street lighting around the tunnel entrances, in particular around the northern entrance. Currently the light spill is at a level that may deter bats from using the tunnel. If possible, Chiltern Railways working with the highway authority, will provide for the street lighting to be altered to a type which reduces this light spillage whilst not compromising public safety. This would enable an improvement in the conditions for bats that use the tunnel for commuting and foraging.

Changes in Air Flows

- 3.9 Whilst it is perhaps to be expected that bats regularly use active railway tunnels in this country, no published evidence has been found about such use. In these circumstances it is, perhaps, less surprising that there is no published information either about the effects of air flows caused by trains on bats (or bat casualties - see following section). The facts, however, are that in respect of the Wolvercot Tunnel, bats have reached an accommodation with scheduled train services passing through the tunnel. There are no responses or recorded incidents involving bats.
- 3.10 Passenger trains passing through the tunnel at 70 mph may result in changes to air flows from those produced by existing passenger services travelling at about 40 mph. The air flow is caused by the static pulse which is present at the head and the tail of a train, and the slipstream effects along its sides.
- 3.11 Studies undertaken for British Railways on trains passing at around 74 mph through the Milford tunnel (Myring, 1972) (i.e. at similar speeds to those proposed by passenger trains at the Wolvercot Tunnel), showed that trains produce a positive pressure in front of the train nose as they enter the tunnel (although it becomes a negative pressure as it reaches the tunnel end) and a negative pressure along the sides of the trains (i.e the slipstream). The pressure levels recorded (both positive and negative) were approximately 0.33 kilo newtons per square metre (kNm^{-2}) or kilo pascals (kPa).
- 3.12 NE has raised concerns about barotrauma, a phenomenon suggested in connection with wind farms due to negative pressure levels created by the movement of wind turbine blades. Whilst the barotrauma effect has been identified, the pressure level which causes this to affect bats remains unknown. The pressure levels created by the wind turbine blades are, however, typically 5 to 10 kPa, which is far in excess of those reported from the trains measured in Milford Tunnel (0.33 kPa).
- 3.13 There have been no studies or call for studies in the UK of the effects of the train slipstream on bats. Studies on the slipstream effects at railway stations have informed the recommended safe distances that humans are to stand from the platform edge. It will be remembered that there are monitoring objections in connection with protected species. The fact no call has been made for studies in respect of railway tunnels on bats suggests that the use of trains in railway tunnels is not harmful to bats. For trains running at speeds of between 100 and 125 mph these are typically 1.5 m (yellow line on platform edge), although exact distances are usually at the discretion of the station operators. At their closest point the trains passing through the Wolvercot Tunnel will be within 0.4 m from the tunnel walls. However, this is only at the outer upper corner of the trains, and in most areas there will be clearance of approximately 1.2 to 1.5 m. In Phase 1 when there are only trains on one line, there will be considerably more clearance in the western half of the tunnel, thereby providing the bats with more room at one side in which to fly safely and avoid any slipstream effects.
- 3.14 In addition tests in the early 1990s showed that irregular or bulky freight trains could produce greater slipstream effects than the then modern designs of passenger trains travelling at twice the speed. A number of the current freight trains passing through

Wolvercot Tunnel are irregular / bulky. Hence the proposed slipstream effects from the proposed faster passenger trains may in fact be no greater than those from the existing freight trains.

- 3.15 Whilst there is no research or call for monitoring to inform the effects specifically on bats, there would therefore, seem to be several factors which render far more likely than not that significant effects from the train slipstream are unlikely to occur.
- 3.16 In addition to the above the vast majority of bat movements will occur unaffected by the Scheme. In Phase 1 there will be only four train movements each hour, and even when a passenger train does pass through the tunnel at approximately 70 mph it will only take around 12 seconds. So for most of the time bats will still be able to commute and forage through the tunnel and access their roost sites without any additional disturbance.
- 3.17 CRCL will in any event be undertaking a monitoring programme to record the effects on bats (see Section 4). In the event that any effects are recorded, measures (ie switching on lighting installed in the tunnel) will be implemented. These measures will take bats out of the way of trains passing through the tunnel, and hence also avoid any issues regarding pressure and slipstream effects.

4 Preventing Bat Mortality

- 4.1 There is no published evidence in the UK of bats being killed by trains. No bat casualties have been found during the site visits and surveys to date, although specific surveys for bat casualties have not been undertaken. The autumn 2009 surveys recorded bats flying in front of the trains, which suggests that trains operating at the present speeds (30-40 mph) are insufficient to prevent bats roosting in the tunnel.
- 4.2 In their submission (OBJ/246/4) Natural England do therefore suggest restricting the speed of the trains through the Wolvercot Tunnel to 40 mph, as this is in keeping with the speeds of the trains which pass through the tunnel at present. While CRCL understand the reasoning for this request, there are strong operational timetable reasons why such a speed restriction cannot be contemplated. This has already been set out in evidence to the Inquiry (CRCL/P/6/A – paragraph 5.21) and has been the subject of cross-examination of Andy Coates and Stephen Barker at the Inquiry. Furthermore, there is no licensable activity by Natural England in respect of running trains or the articles on the part of Natural England to condition anything save a license for (eg) deliberate destruction of bats.
- 4.3 Natural England also refers to the discussions at a meeting with CRCL on 27 October 2010 at which Stephen Barker acknowledged that there may be slightly more flexibility in the service timetable in the early morning and late evening, both times when bats can be active. CRCL can confirm that the flexibility in the service at these times is still insufficient to accommodate a reduction in speed to, for example, 40 mph and also there is no mechanism for signing and enforcing variable speed limits. There are no locations on the UK rail network where seasonal or daily variations in speed limits are required or are in use, such an approach is not acceptable to Network Rail (pers comm. Matthew Rice, Network Rail).

- 4.4 CRCL would also like to qualify Natural England's reference to 40 mph being the point at which mortality to bats from the trains is likely to increase (quoting Geoff Billington, CRCL's bat specialist, at the same meeting on 27 October 2010). There is no published reference source in the UK for increases in bat casualties at 40 mph from any form of transport. Monitoring of road scheme developments has recorded bats flying across roads and avoiding road traffic which is travelling at 30 mph, but have observed them having difficulties avoiding large vehicles at 50 mph (pers comm. Geoff Billington, Greena Ecological Consultancy). These observations relate to the effects of road vehicles on for example A roads, and not rail traffic. There is no evidence to suggest that single trains passing minutes apart on a single line, will have the same effects on bats as a number of cars passing continuously passing.
- 4.5 Between 0100 and 0500 there will in any event be no trains passing through the tunnel, and hence there will be no risks to bats. There will also be no risks to bats for the vast majority of time outside these hours for the reasons already stated in paragraph 3.16. For a collision to occur, the train must then pass through the tunnel when bats are active, and in an area which puts them at risk. This reduces the risk of collisions further as all these factors will not always coincide. It is therefore, highly improbable that bat casualties will result from the trains operating at about 70 mph, or that significant impacts to bats collectively will result.
- 4.6 As detailed in both Steve Barker's and Andrew Coates's proof, the Scheme design will increase the open cross-section space which could be used safely by bats within the tunnel even when a train is passing through it. There will be a minimum 1.2 m clearance above the trains due to lowering of the track and additional space around the sides of the trains due to the shape of the tunnel. During Phase 1 and 2A, there will still only be a single track through the tunnel, albeit closer to the eastern side of the tunnel. This will result in the top of the passenger trains closest to the wall being within 0.4 m of the wall at the closest point. Clearance will still be much greater than this around the much of the train. The offsetting of the track from the current centre line to the east will provide more open space in the western half of the tunnel, which will allow considerable space for bats even when a train is passing through the tunnel. This will not be reduced until a second track is laid in Phase 2B.
- 4.7 Natural England is of the opinion that licences to allow activities that would otherwise or constitute offence will be required for both construction and operation of the Scheme. CRCL is expecting to apply for a licence to allow the construction works to be undertaken, as there will be a need for bats to be excluded from their roosts for a short period (committing an offence under Regulation 41 (1) (d)). Natural England has agreed that the measures proposed (see paragraphs 3.3 to 3.8 above) should satisfactorily mitigate for the disturbance which results from the construction works (pers comm. Charlotte Frizell, Natural England).
- 4.8 However, CRCL does not agree that there are any licence requirements for the operating trains. There is an extensive train network throughout the UK, including high speed trains and none require licences in the event that they might kill bats as they travel. Even if a bat was killed it would certainly not be done deliberately, which is the focus of Regulation 41. It is presumably not without good reason that the Habitats Regulations 2010 include, at Regulation 50, requirements for the Monitoring

of Incidental Capture and Killing. Any bat casualties as a result of the operating train services, especially on existing train routes, are likely to be incidental.

- 4.9 Natural England have not identified where offence is forecluded by the grant of a license by them for the operation of a train. Regulation so requires appropriate authorities to establish a system to monitor such incidental captures or killings, and identify the need for further research or conservation measures to ensure that such incidental killings do not have a significant negative impact on that species.
- 4.10 CRCL is uncertain what monitoring Natural England has in place to meet as a planning condition requirements. Despite that uncertainty, CRCL is willing to implement a monitoring scheme for bats at the Wolvercot Tunnel. This will include casualty searches, the use of anabats at both ends of the tunnels, together with visual imaging. The casualty search for example would include a systematic search for bats on the track-bed and an area stretching 3 m either side of the track(s) will be undertaken. This will be carried out within the tunnel and along 50 m of the track outside each tunnel entrance. The details and timings of the searches will be agreed with Natural England.
- 4.11 If the findings of this monitoring show that it is necessary, then CRCL will implement an effective system of light deterrence in the tunnel so that significant negative impacts on bats do not occur. The lighting system would be installed during the tunnel works, since it would be most cost effective to do it at that stage, but would only be brought into use if the findings of the monitoring suggest that it is necessary, and Natural England agrees that it is appropriate based on those findings. Monitoring would continue for two years after Phase 1 services commence. If the lighting scheme is activated, monitoring would continue for a further year. A similar arrangement could (subject to approval by Network Rail) be implemented after the double tracks through the tunnel are laid as part of Phase 2B.
- 4.12 Since CRCL does not believe that such arrangements fall within the ambit of the Protected Species licence, it is prepared to propose a planning condition to secure these arrangements, subject to Natural England agreement.
- 4.13 CRCL is therefore intending to install a lighting scheme that will be switched on prior to a train approaching in the event of two or more casualties being recorded in a monitoring season. The purpose of the lighting will be to illuminate the tunnel so that bats will move away from the lighting. This will cause them to either leave the tunnel temporarily, or to seek the dark afforded by the deeper drain holes and crevices present in the tunnel, including the new ones created specifically as part of this Scheme. In either case, this will take the bats out of the path of any oncoming trains. This is seen as a positive response to the requirements of Regulation 50 of the Habitats Regulations 2010 which identifies the need for measures if any incidental kills are found to occur.
- 4.14 There will be several triggers for this lighting to be switched on or off, as follows:
- **temperature** – the lights will be triggered only if the temperature is $\geq 2^{\circ}\text{C}$, as below this temperature, bats are unlikely to be active;

- **darkness** – the lights will only be triggered between dusk and dawn, the duration of which varies throughout the year;
 - **train movements** – the lights will only be triggered in advance of a train passing through the tunnel and will cease to illuminate immediately as the train leaves the tunnel; and
 - **train speeds** – the lights will only be triggered if train speed exceeds 40 mph. Goods trains will not trigger the lights.
- 4.15 When the lights are triggered they will gradually illuminate over at least a minute to their full lux (lx) level of 40-50 to allow the bats to sense the light, and react to it. A simple illumination from the outset of 40-50 lx could have too much of an instantaneous effect on the bats (ie a similar effect to that in humans of going from a brightly lit area to a completely dark one). Experience from the effects of lights on bats from road schemes suggests that illumination of 25 lx will form a barrier to the movement of *Myotis*, long-eared and horseshoe bats (*pers comm* Geoff Billington, Greena Ecological Consultancy), hence a level of 40-50 lx is considered more than sufficient for the required purpose in Wolvercot Tunnel where there are also other species that are more tolerant of light (eg pipistrelles).
- 4.16 The lights will be positioned in the upper arch of the tunnel and they will be arranged so that they do not directly illuminate any of the roost sites within the tunnel, and do not fully illuminate the roost space. Advice is being provided on this by specialist lighting designers (GI Equation), who have considerable experience of the effects of lighting systems on bats. Few if any lights will be located within 20 m of the tunnel entrances so that these areas remain darker, to encourage bats towards these areas and out of the tunnel.
- 4.17 The effect of light on the movements of bats is well known. An example of this which provide support for the approach is a study of floodlighting at a canoe pool in Burrs Country Park in Bury in 1996 by the South Lancashire Bat Group (SLBG). SLBG found Daubenton's bats avoided the pond when it was floodlight. However, the bats arrived at the pond within a few minutes of the lights being turned off. That they arrived at the pool so quickly was thought to indicate the importance of the pool for the bats for foraging. Similarly if the tunnel is so important to the bats, then it is likely that they will return quickly once the lights are switched off.
- 4.18 CRCL can timetable the trains to avoid them passing which will reduce the risks of bat casualties and the effects on bats from air flows. However, as referred to in paragraph 7.2 of CRCL/P/10/E, this cannot be guaranteed, if for example services are not running to timetable. This is only a risk in the later Phase 2B of the Scheme, as during Phase 1 and 2A, there will only be a single track through the tunnel.

5 Supplementary Baseline Surveys and Monitoring

- 5.1 CRCL believes that it will have sufficient information to inform a licence for the construction works once further hibernation surveys are undertaken over the winter of 2010-2011. No further surveys beyond these hibernation surveys are envisaged.

- 5.2 Given the idea that a licence is not required for the operation of the Scheme, CRCL does not propose to undertake further baseline bat survey.
- 5.3 CRCL is committed prepared to undertake monitoring works and will agree the approach with Natural England.

6 Alternative Commuting Routes and Foraging Areas

- 6.1 As stated in paragraph 4.5, there are also a number of factors which mean that the actual risk of bats being affected by the Scheme is low. The number of bats recorded during the surveys were also low.
- 6.2 The approach set out above will, if necessary, implement measures (eg lighting) that will deter the bats from being in parts of the tunnel where they could be affected by the passing trains. Once the trains are gone, and the lights have been switched off, the bats can continue to commute freely through the tunnel.
- 6.3 In the event that the use of the lighting deters the movement of bat species which are more sensitive to light (eg *Myotis* species) over a longer period (ie they do not then return immediately to continue through the tunnel), then the bats would need to find alternative commuting and foraging corridors. Discussions with experts who survey bats suggests that bats understand their environs well, and appear to know where alternative routes exist (pers comm. Geoff Billington, Greena Ecological Consultancy; Les Hatton Eden Ecology).
- 6.4 Some of the bat species recorded during the surveys (eg the pipistrelles) are more tolerant of light. Such species may seek an alternative route which bypasses the tunnel, including through the more lit urban areas to the east of the tunnel.
- 6.5 The more light sensitive species (eg the *Myotis* species) are less likely to move outside the railway corridor unless it is into an unlit area. The Wolvercot Tunnel passes beneath the Wolvercote Roundabout, and hence much of the area around the railway corridor comprises well lit main roads including the Northern Bypass Road, the Woodstock Road, and the roundabout. There is extensive residential housing in the area and hence the smaller roads associated with these urban areas are also well lit. It is unlikely therefore, that the more light sensitive bat species will cross a number of well lit roads to rejoin the railway corridor south of the tunnel.
- 6.6 However, even in the event that some bats are affected there are other commuting links from the railway corridor, both to the north and south of the tunnel that are not well illuminated, and which provide alternative routes for bats which are less able to tolerate well lit areas. For example to the south of the tunnel the railway corridor crosses the Oxford Canal, and the canal corridor is known to be used by bats including *Myotis* species such as Daubenton's bats (pers comm. Geoff Billington, Greena Ecological Consultancy). The canal passes under the A34 and allows further commuting access for bats both to the west and north. There is also another railway corridor which runs off to the north-west. Similarly to the north of the tunnel, the railway corridor links in with features such as the North Oxford Golf Course and areas of open agricultural fields and hedgerows to the east.

- 6.7 Hence in the event that any bats are deterred temporarily from passing through the tunnel, there are links into extensive areas of alternative foraging and commuting habitat in the wider surrounds. So no long term effects on bats are envisaged.

7 Natural Range

- 7.1 The bat species which have been recorded by surveys at Wolvercot Tunnel are all species for which the UK, and this part of Oxfordshire is part of their natural range.
- 7.2 The numbers of bats recorded by the surveys were low. Given the populations of these bat species in the UK (Harris, 1995), and the comparatively small numbers which are likely to be affected by the Scheme, effects on their favourable conservation status at a national level are not predicted.
- 7.3 The bats which have been recorded along the Wolvercot Tunnel railway corridor form part of the overall bat population in Oxfordshire. Details about bat populations in Oxfordshire are not held by Natural England, and are not easily available from other local organisations (eg Oxfordshire Bat Group). That there are other bat populations in Oxford is evident from the data held by the Record Centre which shows large numbers of bat records from Wytham Woods, approximately 6 km south-west of the Wolvercot Tunnel, and numbers of smaller roosts within 20 km of the tunnel. These are only records which have been provided to the data centre and are unlikely to represent the overall bat populations in Oxfordshire. Data which has been made available since the ES was produced shows that other hibernation roosts also occur including at Horspath Tunnel some 15km to the south east of Wolvercot Tunnel. This disused railway tunnel supports larger numbers of hibernating bats than recorded at Wolvercot. Accordingly, the natural route of bats is broad and the natural route will continue in plan with or without the Chiltern Railways scheme.
- 7.4 Whilst it is difficult to estimate exact population size which may pass through Wolvercot Tunnel, it is important to consider the likely extent of the risks (ie only seconds for any one train, that the effects of the moving trains on air flows are unlikely to be significant, and that effects would only occur to bats which are in areas that would place them at risk), and the measures which will be put in place to encourage bats to move away from those risk areas. The approach is one of avoiding the risks of bats colliding with the trains, and allowing them to continue to commute through the tunnel once the trains have passed. Hence the numbers effected are predicted to be low, and given the information that is available about the numbers of bats elsewhere within Oxfordshire, it is unlikely that the favourable conservation status of bats will be affected.

8 Conclusions

- 8.1 This Position Statement responds to the issues raised by Natural England in **OBJ 264/4** in relation to bats and Version 2 of the Bat Mitigation Plan.
- 8.2 Site investigations in the tunnel have confirmed that existing crevices used by bats can be retained, and CRCL has committed to providing additional artificial crevice roost sites.

- 8.3 As much work as possible on the tunnel will be undertaken during the daytime to avoid impacts on bats commuting through the tunnel. Bat boxes will be erected along the railway embankments to provide alternative roost sites for bats temporarily displaced during the daytime works.
- 8.4 Any works at night will avoid either dawn or dusk and part of the night to retain a level of bat movement through the tunnel.
- 8.5 Existing light levels around the tunnel entrances will be maintained over a distance of 25m (from the entrances) during construction works outside the tunnel. This will be achieved either by controls over proximity of the works to the tunnel entrance, or by the use of screens to control light dispersion.
- 8.6 Natural England has indicated that satisfactory mitigation is achievable for disturbance events during the construction works and hence obtaining a licence is entirely possible.
- 8.7 The information which is available about pressure levels and air flow effects suggests that neither of these issues operational issues will have significant effects on bats in the Wolvercot Tunnel.
- 8.8 The risks of bat colliding with the trains are low when all the factors that must coincide for such an event to occur are considered. Such a collision, if it occurs is simply an incident of the running of a train as it would be anywhere else in the country
- 8.9 CRCL is of the opinion that effects from the normal operation of the railway are covered under Regulation 50 and are incidental. As a means of meeting any requirements under this Regulation, CRCL is prepared to implement a monitoring programme. This will include the implementation of measures such as lighting to deter bats and avoid casualties if any are found from the monitoring.
- 8.10 Natural England is asked to give careful consideration to this Position Statement and to the monitoring and mitigation CRCL is prepared to provide. Natural England is asked to confirm that its objection in relation to bats at Wolvercot Tunnel is withdrawn, subject to the implementation of such of these measures as it agrees are appropriate. Natural England is asked to confirm that, as the basis of the information available, a Protected Species licence is likely to be granted for the tunnel works. Any such application will be made so that a licence can be granted concurrently with the TWA Order, or earlier, if licensable works are to be undertaken before the Order is granted.

Andrew Coates

Ian Gilder

16 December 2010