

Russell J Keir
HM Inspector of Railways
Telephone: 020 7282 3752
E-mail: russell.keir@orr.gsi.gov.uk



12 February 2015

Ms Carolyn Griffiths
Chief Inspector of Rail Accidents
Cullen House
Berkshire Copse Rd
Aldershot
Hampshire GU11 2HP

Dear Carolyn,

RAIB Report: Penetration and obstruction of a tunnel between Old Street and Essex Road stations, London

I write to report¹ on the consideration given and action taken in respect of the recommendations addressed to ORR in the above report, published on 13 February 2014.

The annex to this letter provides details of the consideration given/action taken in respect of each recommendation.

We expect to update you on progress with regard to recommendation 3 (Nexus) by 1 May 2015.

Where recommendations are being reported as 'Implementation on-going' ORR will continue to monitor progress and will advise RAIB when actions being taken to address this recommendation have been completed.

We do not propose to take any further action in respect of recommendations that have been reported as implemented unless we become aware that any of the information provided becomes inaccurate, in which case we will write to you again².

We will publish this response on the ORR website on 6 March 2015.

Yours sincerely

Russell J Keir

¹ In accordance with Regulation 12(2)(b) of the Railways (Accident Investigation and Reporting) Regulations 2005

² In accordance with Regulation 12(2)(c)

1. All 5 recommendations were addressed to ORR when the report was published on 13 February 2013.
2. After considering the report / recommendations we passed recommendations 1, 2 and 3 to the following, asking them to consider and where appropriate act upon them and advise ORR of its conclusions.
 - Glasgow SPT Subway
 - HS1 Ltd
 - London Underground Ltd
 - Network Rail
 - Docklands Light Railway
 - Nexus
3. As RAIB also addressed recommendation 5 to another public body, the ORR does not propose to take any formal action as the Railways (Accident, Investigation and Reporting) Regulations 2005 place an equal obligation on these bodies or authorities to report directly to RAIB.

Recommendation 1

The intent of this recommendation is to include Railway Infrastructure Managers in property-related searches, and to provide information for developers to reduce the risk presented to existing railway infrastructure where widely available mapping does not show tunnel alignments, or shows them incorrectly.

Publication of accurate alignments is not required if implementers prefer alternative approaches (e.g. publishing maps showing bands of land encompassing tunnel alignments together with advice that the railway company should be contacted in respect of all proposed developments in these bands).

Railway Infrastructure Managers with tunnels and associated subterranean structures which are under urban areas and not shown on Ordnance Survey mapping should implement a process to publish information concerning those areas of land that are in reasonable proximity to this infrastructure.

They should then take all reasonable steps to publicise this information, and to ensure that it is available to those providing the legal and ground engineering professions with significant numbers of searches relating to property in Great Britain.

Steps taken or being taken to address the recommendation

Glasgow SPT Subway

4. The information below was provided by Glasgow SPT Subway on 14 November 2014:

SPT has provided contact information on its web page specifically for the purposes of future development; it includes an updated map, contact details and guidance notes and was due to become live by 28 November 2014. SPT also intend to publicise how to access the relevant information to the appropriate professions, discussions are on-going as to the most suitable method to achieve this. The favoured option under consideration is to place a communiqué in a relevant trade magazine.

ORR decision

5. ORR in reviewing the response provided by Glasgow SPT Subway has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented

HS1 Ltd

6. In its response of 14 May 2014, HS1 Ltd provided the following information: *Safeguarding means that HS1 is referenced in local authority land searches so that when properties change hands, usually before a significant development takes place, attention is drawn to the presence of HS1. It is standard practice that local authorities identify any safeguarding within 200m of a property. The HS1 Property Manager responds to queries and requests for clarification raised by the purchaser's solicitors.*

HS1 has tunnel sections at: London Tunnel 1(LT1); London Tunnel 2 (LT2); the Thames Tunnel; and North Downs Tunnel. They are all shown on OS maps over the scale of 1:25,000. They do not show the depth or diameter of the tunnels. HS1 will consider how the co-ordinates and levels of tunnels and tunnel cross section dimensions can be provided as a downloadable document and any conditions that should be attached to the use of this data.

The concerns about development in the vicinity of or above tunnels relates to developments surcharging the tunnel causing increased loading, deformation or leakage of the tunnel linings as well as any penetration. Although the current width of the safeguarded corridor over the tunnels is 85m the risks associated with development near to tunnels is mitigated by the following:

- *Large parts of LT1 between St Pancras and Stratford pass under Victorian housing sometimes in or adjacent to conservation areas so there is a low risk of large scale commercial development.*
- *The E-W alignment of the tunnels generally crosses the N-S alignment of properties so the safeguarded area still effectively attaches to properties within the zone of effect.*
- *We are also consulted as adjoining owners albeit in respect of sub-surface interests.*
- *Local land searches reveal the existence of HS1 within 200m of any referenced area.*

7. On 12 December 2014, HS1 explained that it did not think it appropriate to publish high profile drawings, alternatively it has published a link on its website for prospective developers that signposts them to a dedicated email address to deal with queries and provision of plan drawings, this will ensure HS1 is consulted at an early stage.

ORR decision

8. ORR in reviewing the responses and considering provided by HS1 has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- taken action to implement it.

Status: Implemented

London Underground Ltd

9. In its response of 16 October 2014, London Underground Ltd provided the following information:

London Underground Ltd does not utilise search companies to respond on its behalf. Within the Infrastructure Protection Team there is a resource dedicated to responding to enquiries about the location of our assets, both above and below ground (this has been in place since at least the mid-1990s). We utilise both Geographical Information System (GIS) and Computer Aided Drawing (CAD) systems (with hard copy back up to ensure a service is still available at times of IT failure) to prepare bespoke plans. Section 3.2 of LU Category 1 standard SI023 applies.

Additionally TfL (Transport for London) Property receives some enquiries but where appropriate we provide the relevant response.

We are concerned that not all search companies provide their clients with the information we provide in response to queries particularly knowing of occasions where our response has been a request for direct contact and the search company has passed this back as a nil response.

We are investigating making access to our resource easier by a link on the revised TfL website when that is launched.

that the TfL web site now contains details to enable developers and others wishing to carry out works near our railway infrastructure to contact appropriate people³.

ORR decision

10. Having considered the responses by LUL, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented

Network Rail

³ The site can be found at; <http://www.tfl.gov.uk/info-for/urban-planning-and-construction/urban-planning-and-construction-contacts?intcmp=17838>

11. In its response of 16 April 2014, Network Rail provided the following information:

Network Rail will review its processes for identifying tunnels and associated subterranean structures and to ensure that all reasonable steps are taken to ensure publication of data in a format which is accessible. This may include either accurate alignments or zones of land.

Network Rail has already provided the London Borough of Hackney with detailed alignment plans for its Northern City Line in order for the local authority to be able to update its data records. Timescale: 30 September 2014.

12. On 30 October 2014 Network Rail provided the following update:

During the summer the Department of Communities and Local Government (DCLG) undertook an extensive consultation on a range of reforms to the planning process on a wide variety of subjects to ensure the system is responsive and effective in the face of changing policy priorities (such as neighbourhood planning). The government used this reform paper as an opportunity to consult on proposed changes to consultation arrangements for rail operators as a consequence of the RAIB recommendations. Network Rail, together with LUL has worked closely with DCLG officials to ensure that any changes are proportionate and effective. Consultation responses from local authorities and others supported the need for improvement as well as information on the location of tunnels and the form and content of that feedback, which Network Rail has recently received, underpins our response.

The feedback from the DCLG consultation is that local authorities would require this information in GIS format for inclusion in their respective hazard registers. We are currently concluding an extensive reconciliation between information held on tunnels, from both the Route and central databases with Network Rail's GIS plans to ensure accuracy. As a consequence of the extensive nature of this reconciliation with OS based plans this exercise will be completed in November [2014], including notification of all Network Rail tunnels by each local authority area, in GIS format.

10. On 2 February 2015 Network Rail provided the following update:

Inclusion on the Network Rail web site in the section buying property adjacent to the railway, which is the agreed protocol by which solicitors and others conducting searches are aware of Network Rail issues. The data set has been produced and will require the web team to update / upload the information. A timescale extension is required to fully implement this.

Revised timescale: 30 April 2015.

ORR decision

11. On 4 December 2014 Network Rail has confirmed it has completed the reconciliation exercise and has implemented a process to publish information concerning those areas of land that are in reasonable proximity to its infrastructure.

12. Having considered the responses by Network Rail, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it by 30 April 2015.

Status: Implementation on-going. ORR will continue to monitor progress and will advise RAIB when actions being taken to address this recommendation have been completed.

Nexus

13. In its response of 7 May 2014, Nexus provided the following information:

We have added the locations of our tunnels to our 'Guide for Developers' document. This is a document available to anyone planning developments adjacent to our infrastructure. It was previously available by request; however we are in the process of adding it to our website.

ORR decision

14. The document 'Guide for Developers' has now been published on the Nexus website. Having considered the response by Nexus, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented.

Docklands Light Railway Ltd (DLRL)

15. In its response of 24 July 2014, Docklands Light Railway provided the following information:

Actions already taken/planned

DLRL needs to protect its tunnels, not just from incursion, but from works around, or adjacent to the tunnels. By publishing tunnel information, there is a danger a developer may develop methods of work (e.g. piling) without reference back to DLRL, when in fact the method of piling can affect the stability of the tunnel structures themselves. The critical aspect for DLRL is that the developer engages with DLRL.

The DLRL tunnels are not shown on free publicly available mapping sites such as Google Maps or Streetmap, although the stations themselves are depicted. However DLRL has a dedicated contact number and email address set up for enquiries and deals with approximately 125 search related queries per month (or an average of 25 – 45 per week). The DLRL specific information is provided as required, including that related to tunnels.

DLRL notes that the RAIB has already written to various 'umbrella' bodies representing solicitors, conveyancers and geotechnical organisations, as well as making recommendations to the Department for Communities and Local Government and the British Standards Institution.

However, in line with the above discussion, and to ensure developers are referred to DLRL to allow us the opportunity to protect the infrastructure, DLRL will also write to a number key bodies to reinforce the requirement to refer searches onto DLRL. These bodies will include:

- *The Association of Geotechnical and Geo-environmental Specialists (AGS);*
- *The British Geological Association (BGA);*
- *The Engineering Group of the Geological Society;*
- *The Ground Forum as the umbrella body for the ground engineering sector;*
- *Royal Institution of chartered surveyors; and*
- *Royal Institute of British Architects*

DLRL will complete this exercise by 30 September 2014

16. On 12 December 2014 Docklands Light Railway Ltd confirmed it had completed the above actions.

ORR decision

20. ORR in reviewing the responses and considering provided by Docklands Light Railway Ltd has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- taken action to implement it.

Status: Implemented

Recommendation 2

The intent of this recommendation is to inform Local Planning Authorities so that the planning approval process can reduce the risk to railway tunnels due to construction activities in close proximity.

Railway Infrastructure Managers with tunnels and associated subterranean structures which are under urban areas and not shown on Ordnance Survey mapping should provide Local Planning Authorities with the information needed for these authorities to identify when a planning application has the potential to affect this infrastructure.

Steps taken or being taken to address the recommendation

Glasgow SPT Subway

21. The information below was provided by Glasgow SPT Subway on 14 November 2014:

SPT has written to Glasgow City Council regarding this recommendation and has subsequently met with senior planning officer. The protocol and consultation zone have been reviewed and revised. An updated consultation zone will be live early in December 2014 and it is anticipated the protocol will be agreed early in 2015. Dialogue will continue with Glasgow City Council regarding the further improvements in information sharing with regard to demolitions, site investigation and utilities work.

ORR Decision

22. ORR in reviewing the response provided by Glasgow SPT Subway has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and

- is taking action to implement it; anticipated early 2015.

Status: Implementation on-going. ORR will continue to monitor progress and will advise RAIB when actions being taken to address this recommendation have been completed.

HS1

23. In its response of 14 May 2014, HS1 Ltd provided the following information:

The Safeguarding Directions were notified to planning authorities. Maps were provided with the original Safeguarding Directions and we are now in the process of digitising these and have started to provide them to local authorities for ease of use. The maps show a safeguarded corridor, typically 85m wide (made up originally for the width of the corridor for 2 tunnels and an element for uncertainty of the exact alignment constructed).

Consultations in respect of planning applications, discharge of conditions and approval of reserved matters

The Safeguarding Directions means consultation is a statutory requirement and applies to the discharge of conditions and approval of reserved matters as well as the original planning application.

Consultation is also required in respect of all subsequent amendments, discharge of conditions and approval of reserved matters and these must be referred to HS1. Consultations are subject to the 14 day requirement for a response as set out in article 10(4) of the GDPO.

Where approval is granted or a minded to approve resolution is made, the conditions which HS1 indicates are necessary, must be included in the Decision Notice. A copy of the Decision Notice is sent to HS1 to confirm that this is the case. If a local planning authority proposes to approve an application contrary to HS1 advice or where the local planning authority does not agree with a condition or requirement, they are required to contact the DfT. The DfT will either notify authorities that there are no objections to the permission being granted or issue directions restricting the granting of permission specifically for those applications.

Pre application discussions

HS1 encourages early involvement in discussions relating to development which could affect the safety, security, integrity and operation of HS1. Where an applicant seeks pre application discussions or where the local authority is aware of development proposals, HS1 will request that the local authority asks the promoter to contact HS1 at the earliest opportunity in order to ensure the successful progress of the design and in order to prevent delays to the development.

Where it is able to do so, HS1 is likely to require the developer to enter into a Protective Provisions Agreement (PPA) if the development is sizeable. A PPA provides a framework for the better management of works in the vicinity of the railway with an emphasis on mitigating any risks to the railway. It also enables effective information exchange with the developer, provision of technical assistance where necessary and gives HS1 the ability to recover costs associated with providing such information and assistance.

HS1 also requests that it is informed when local authorities are consulted under circular 2006/1457 by government departments.

Consultation on deemed consents and permitted development

Where prospective developers are required by the Town and Country Planning (General Permitted Development) Order 1995 as amended by SI 2013/1101 to consult the local authority prior to exercising permitted development rights, HS1 advises that it would be helpful to be informed of their proposals as soon as possible in all cases within the safeguarded zones.

Consultation in respect of Development Plan and related documents

The area safeguarded by the directions should be identified in all local plan documents and plans related to them. No local authority proposals should be included which conflict with Safeguarding Directions. The development plan should state that the Safeguarding Directions have been made by the Secretary of State for Transport. HS1 invites local planning authorities to consult them on any drafts of development plan documents or plans related to them.

Risk assessment and conditions required

HS1 in conjunction with NR (HS) examines the proposals and identifies the risks that can be identified from the information provided. Where there is inadequate information, the information required to assess the potential risk to HS1 will be requested. Where risks have been defined HS1 requires that conditions that will assist in managing the risks are placed on any consent. The conditions may be (1) positive i.e. requiring the design or development to be carried out in a specific manner; or (2) negative, requiring that certain things are not done. Many conditions relate to the need for consultation and the provision of more detailed information e.g. details about foundation design or construction management and requiring the prior approval of further details. Committee reports are reviewed to ensure that proper consideration has been given to HS1 concerns and the conditions are included. Decision Notices are monitored to ensure conditions have been included.

ORR decision

24. ORR in reviewing the response provided by HS1 has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented

London Underground Ltd

25. In its response of 16 October 2014, London Underground Ltd provided the following information:

Since the 1990s London Underground Ltd has issued both the Planning and Building Control departments of each local authority that we have assets in with 'Zones of Interest' Drawings. Latterly these have also gone to highways departments as they now also show 'Streets of Engineering Difficulty' under the New Roads and

Streetworks Act. The last complete issue was in late 2009 and it had been our intention to do a new issue on publication of this report. This will now be done by the end of October 2014. Section 3.3 of LU Category 1 standard SI023 applies.

ORR decision

26. ORR in reviewing the responses provided by London Underground Ltd has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- taken action to implement it

Status: Implemented

Network Rail

27. In its response of 16 April 2014 Network Rail provided the following information:

Network Rail will review with the Local Government Association the form and content of information to be supplied to local authorities on the location of tunnels and associated subterranean structures as well as guidance on who to contact within Network Rail for specialist advice on the impact of development proposals upon such tunnels and underground structures. Timescale: 30 September 2014.

28. Network Rail provided an update on 30 October 2014 confirming all actions are complete; this is included above in relation to recommendation 1.

Recommendation 1: ...The feedback from the DCLG consultation is that local authorities would require this information in GIS format for inclusion in their respective hazard registers. We are currently concluding an extensive reconciliation between information held on tunnels, from both the Route and central databases with Network Rail's GIS plans to ensure accuracy. As a consequence of the extensive nature of this reconciliation with OS based plans this exercise will be completed in November [2014], including notification of all Network Rail tunnels by each local authority area, in GIS format.

29. On 2 February 2015 Network Rail provided the following update:

Inclusion on the Network Rail web site in the section buying property adjacent to the railway, which is the agreed protocol by which solicitors and others conducting searches are aware of Network Rail issues. The data set has been produced and will require the web team to update / upload the information. A timescale extension is required to fully implement this.

Reasoning:

Publication and dissemination to all local planning authorities of OS based data showing the location of tunnels within their authority area which they can include on their hazard plans / GIS systems. This will enable easy identification within Councils of the location of such structures for the purposes of advising prospective planning applicants and for notification to Network Rail of any planning applications that may impact upon such sensitive assets. Network Rail wrote to all 372 LPA's within the UK to advise them of the RAIB report recommendations on the 28th November

[2014] and to date Network Rail has received responses from 168 Councils requesting data.

There was an additional action point which has been addressed for planning applications that are received by Network Rail that are located on or adjacent to tunnels to specifically name the relevant tunnel engineer in the consultation response. The letter went out on the 28th November [2014] to all LPA's. Network Rail will send a chaser letter to those councils that haven't responded, therefore, a timescale extension to 30 April 2015 is required to fully implement.

Revised timescale: 30 April 2015.

ORR decision

30. Having considered the responses by Network Rail, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- is taking action to implement it by 30 April 2015.

Status: Implementation on-going. *ORR will continue to monitor progress and will advise RAIB when actions being taken to address this recommendation have been completed.*

Docklands Light Railway Ltd

31. In its response of 24 July 2014, Docklands Light Railway provided the following information:

Actions already taken/planned

Once a developer or third party is made aware of the existence of tunnels, or indeed any other DLRL infrastructure, the arrangements for managing the third party are robust, and are described in a recently revised Business Critical process (BCP) BCP-06: 'Third Party Developments' which is supported by a newly revised Infrastructure Protection Regime: 'Guidance for Developers' document. DLRL seeks to impose firm conditions in order to protect the integrity of the infrastructure. This will include where appropriate a technical submission by the developer and the signing of an asset protection agreement between DLRL and the developer. There is a specific section in the new guidance document covering piling and DLRL's protection zone.

In relation to recommendation 2, DLRL spans a number of local planning authorities which have responsibility for the land and our subterranean structures. These are the London Borough of Tower Hamlets, London Borough of Newham, City of London Corporation and the Royal Borough of Greenwich.

DLRL has previously written to all of the boroughs to provide details of DLRL's property interests, including DLRL's estate plans, freehold and leasehold ownership (including its tunnels) as well as the DLRL protection zone. Going forward, DLRL will write to each borough on a quarterly basis to remind the respective planning teams of the DLRL estate information and contact details for planning matters. This will be led by the DLRL property department and the requirement will be captured in the revised Business Critical Process (BCP) BCP-06: 'Third Part Developments'.

32. On 12 December 2014, Docklands Light Railway Ltd informed ORR that the new issue of BCP-06 had not been formally implemented. It had been issued for consultation and the consultation period had closed. Docklands Light Railway Ltd was in the process of resolving comments with applicable stakeholders and anticipated that BCP-06 would be issued early in 2015.

ORR decision

33. ORR in reviewing the responses provided by Docklands Light Railway Ltd has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented. *There is a process in place which is being revised.*

Nexus

16. In its response of 7 May 2014, Nexus provided the following information:

We have written to all local authorities in the Tyne and Wear Area appraising them of tunnel locations and reminding them to send their “weekly lists” of applications to us.



ORR decision

34. ORR in reviewing the responses provided by Nexus has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented.

Recommendation 3

The intent of this recommendation is to encourage Railway Infrastructure Managers to undertake pro-active measures to identify works which could affect the railway.

Railway Infrastructure Managers should review, and where appropriate, revise existing arrangements for identifying infrastructure development which could affect tunnels and associated subterranean structures in urban areas. Where not already done, this should include pro-actively searching for planning applications and undertaking visual inspections of the ground surface above tunnels.

Steps taken or being taken to address the recommendation

Glasgow SPT Subway

35. The information below was provided by Glasgow SPT Subway on 14 November 2014:

Glasgow SPT have undertaken visual inspections of the ground surface above the tunnels and categorised any potential development in high, medium and low risks. The frequency of the inspections are based upon 3 monthly for high risk, 6 monthly for medium risk with all other locations being reviewed on a yearly basis. Any planning applications within the affected area of the tunnels are proactively reviewed and visual inspections conducted if necessary. Information from the visual inspection and active planning applications are shown on GIS files.

ORR decision

36. Having considered the responses by Glasgow SPT Subway, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented.

HS1

37. In its response of 14 May HS1 Ltd provided the following information:

The consultations referred to in the response to recommendation 2 – consultation in relation to the local plan, pre-application discussions and planning applications provide good advance notice of development. Developers welcome early advice from HS1 to avoid abortive design work.

HS1 maintains a schedule of consultations and is therefore able to monitor consultations received to identify authorities where there are few or no consultations. Where there is reason to believe that we are not being consulted about planning applications, HS1 writes to the authority. HS1 wrote in December 2013 and again in March 2014 to the 8 authorities where consultation has been infrequent reminding them of their statutory obligations under the Safeguarding Directions and the area to which it applies.

HS1 has also met with planning officers to remind them about the need to consult and the reasons why it is important that HS1 is consulted notwithstanding that HS1 has been constructed.

HS1 makes arrangements for NR (HS) to carry out patrols above tunnels. For the Civils Examination team, this is annual and is part of the tunnel examination regime, but does not include LT1 and LT2. It is formally recorded. The sole purpose is to look for developments that they are unaware of and where the outcomes are not formalised. The frequency is determined by a risk assessment in agreement with HS1 as infrastructure owner.

HS1 does not proactively search for planning applications in planning registers at present. This would present a significant workload and the proportion of planning applications that do not reach HS1 is low, partly because of the Safeguarding Directions. The reminder letters will help ensure that HS1 is not omitted from consultations.

HS1 has become aware of four planning applications since summer 2013 where HS1 has an interest. Of this 8%, HS1 was able to influence the outcome later in about half of the cases by becoming aware of the scheme before it started.

HS1 also seeks that developers enter into a Protective Provisions Agreement at the outset. This enables HS1 to capture the proper costs of co-operation and the provision of information and drawings. An Outside Parties Developers Handbook provides guidance for developers and provides a Charter which sets out the standard of conduct that the developer can expect.

ORR decision

38. Having considered the responses by HS1, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented.

London Underground Ltd

39. In its response of 16 October 2014 London Underground Ltd provided the following information:

It has been London Underground practice since the late 1990s to patrol its railway to identify un-notified works. This is now enshrined in section 3.4 of London Underground's Category 1 Standard 1-023. With London Underground running through over 30 planning authorities and having neighbouring properties running into the tens of thousands it is impractical for us to search for new applications for all neighbouring properties. Given that not all works that constitute a risk to the railway require planning permission we are satisfied that our existing processes are appropriate for the risk.

ORR decision

40. Having considered the responses by London Underground Ltd, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented.

Network Rail

41. In its response of 16 April 2014 Network Rail provided the following information:

Network Rail is currently working with the Department for Communities and Local Government and other Railway Infrastructure organisations on consultation arrangements for planning applications that could impact upon tunnels and associated subterranean structures. Network Rail will also review with the Local

Government Association measures for pro-active awareness of development that could impact tunnels and associated subterranean structures for local authorities. Timescale: 30 September 2014.

42. On 30 October 2014 Network Rail provided the update below:

The DCLG are currently receiving advice from Treasury Solicitors on the proposed drafting of changes on consultation. It appears that ministers are minded to accept the requirement to consult within 10m of the operational boundary and Network Rail continues to work with DCLG on implementation. We understand that this is likely to come into effect in April 2015.

ORR decision

43. Having considered the responses by Network Rail, ORR has concluded that, in accordance with the Railways (Accident Investigation and Reporting) Regulations 2005, Network Rail has:

- taken the recommendation into consideration; and
- has taken action to implement it.

Status: Implemented. *Network Rail has taken appropriate action in accordance with the requirement of the recommendation.*

Docklands Light Railway Ltd

44. In its response of 24 July 2014 Docklands Light Railway provided the following information:

Actions already taken/planned

In general DLRL will be notified of proposed works, either directly by the developer or by the local planning authority, after a planning application has been made. DLRL has a dedicated email address for this purpose:

developmentconsultations@dlr.tfl.gov.uk. However, it is recognised that this relies on the developer and/or the local planning authority contacting DLRL. Accordingly, DLRL has reviewed its existing proactive arrangements in relation to identifying infrastructure developments which could affect tunnels and other subterranean structures in urban areas.

Current arrangements include the following:

- *DLRL regularly meets with TfL Borough Planning to discuss the larger planning applications, and to receive and provide guidance on DLR matters.*
- *The DLRL Franchisee for train operation has Site Safety Observers who regularly review on-going construction activity around the railway and monitor implementation of third party construction activities about the DLRL.*
- *DLRL meets with both the Franchisee and City Greenwich Lewisham Rail (CGLR) – who owns and maintains the Lewisham extension – at the fortnightly infrastructure protection meeting. One of the aims of this meeting is to encourage dialogue with our operational partners and discuss on-going management of third party activities.*

- *Passenger Service Agents are trained to report issues (including construction activity) about the railway.*

As a response to the RAIB recommendation DLRL will implement further arrangements, as follows:

- *The DLRL Property team will review planning application registers on a monthly basis. We also use 'Promap' to search for planning applications related to the DLRL (including over DLRL's tunnels). We will encourage local boroughs to liaise with the DLRL.*
- *DLRL will carry out a land referencing exercise to identify the current freehold owners of the land which contains DLRL subsoil for tunnels. DLRL will then implement a 'Property Watch' arrangement using the Land Registry to periodically check if the property ownerships have changed. A short study is required to determine the scope of this referencing exercise and this will determine the timescale for completion of the referencing. The scoping exercise will be completed by end of September 2014.*
- *DLRL will also specify that DLRL infrastructure protection patrols carried out by the DLRL maintainers explicitly require checking DLRL subterranean structures at street level (on a four weekly basis) and that these patrols are recorded using a bespoke infrastructure inspection report. These would then be submitted and reviewed at the fortnightly infrastructure protection meeting. This arrangement will be formalised in a new issue of Business Critical Process (BCP) – BCP-06: Third Party Developments. The intention is to implement the new BCP from 1 December 2014 (i.e. for the new DLRL franchise).*

45. On 12 December 2014 Docklands Light Railway Ltd informed ORR that the new issue of BCP-06 had not been formally implemented. The proposed document with the new requirements for street level patrols above the subterranean structures had been issued for consultation and the consultation period had closed. Docklands Light Railway Ltd was in the process of resolving comments with applicable stakeholders and anticipated that BCP-06 would be issued early in 2015.

46. In the meantime, a new maintenance standard for civil engineering (MR-500) specifically requires the new Docklands Light Railway franchisee, Keolis Amey Docklands, to patrol the route boundaries at intervals not exceeding one month. The purpose of the patrol is to specifically observe works adjacent to, over, under or on Dockland Light Railway's property by third parties.

ORR decision

47. ORR in reviewing the responses provided by Docklands Light Railway Ltd has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- is taking action to implement it, anticipated early 2015.

Status: Implementation on-going. *ORR will continue to monitor progress and will advise RAIB when actions being taken to address this recommendation have been completed.*

Nexus

48. In its response of 7 May 2014, Nexus provided the following information:

We have reviewed our current systems and consider them to be sufficiently robust for our circumstances. We have yet to decide whether there is any advantage to be gained from undertaking visual inspections of the ground above tunnels.

49. On 5 February 2015 we wrote to Nexus seeking the outcome of its consideration of undertaking visual inspections of the ground above tunnels. We await their response and will update RAIB further when this has been received and considered.

Status: In-Progress. ORR will update RAIB by 1 May 2015

Recommendation 4

The intent of this recommendation is for the British Standards Institution to amend British Standard 5930:1999+A2:2010 to clarify that some railway tunnels are not shown on Ordnance Survey mapping.

The British Standards Institution should amend British Standard 5930:1999+A2:2010 'Code of practice for site investigations' to make clear that:

- a) tunnels used by underground railways and associated subterranean structures may not be shown on Ordnance Survey mapping; and
- b) rail infrastructure owners should be contacted during desk studies and utility searches where appropriate

Steps taken or being taken to implement the recommendation;

50. In its response on 25 November 2014, The British Standards Institute provided the following information:

In consultation with the technical committee responsible for maintaining BS 5930:1999+A2:2010, BSI proposes to incorporate the following recommendation:

'Where past tunnelling is a possibility, it should be taken into account. It should not be assumed that all tunnels and underground structures are shown on Ordnance Survey mapping. Account should also be taken of the need to approach transport services/utility infrastructure owners with sub surface tunnel networks and underground structures.'

The wording of the above recommendation was developed by the technical committee following its chairman having sight of the draft report that was initially put out on selective consultation by the RAIB and publication of the final report 03/2014 thereafter in February. A revised draft of BS 5930:1999+A2:2010 incorporating this recommendation will be issued for public consultation for 2 months commencing on 1 December [2014] and will be available to review online at <http://drafts.bsigroup.com/> Final publication of what will become BS 5930:2015 is currently scheduled for 30 June 2015.

ORR decision

51. ORR in reviewing the response from the British Standards Institute has concluded that in accordance with the Railway (Accident Investigation and Reporting) Regulations 2005, it has:

- taken the recommendation into consideration; and
- is taking action to implement it, anticipated by 30 June 2015.

Status: Implementation on-going. *ORR will continue to monitor progress and will advise RAIB when actions being taken to address this recommendation have been completed.*