THE ALL-PARTY PARLIAMENTARY LIGHT RAIL GROUP MEMORANDUM

TO: THE MEMBERS OF THE ALL PARTY PARLIMENTARY LIGHT RAIL ENQUIRY PANNEL

FROM: MARTIN PROSSER, BSC

SUBJECT: UTILITY DIVERSIONS FOR LIGHT RAIL SCHEMES

DATE: 05/10/2009

1.0 Executive Summary

1.1 The diversion of utility apparatus is a major factor in the cost and implementation of light rail schemes within the United Kingdom. This paper details some of the issues encountered in delivering works of this nature from the author's experience.

2.0 Introduction

2.1 My experience in the field of utility diversions for railway projects is based on my employment in the following roles, with 2 of the largest construction companies in Europe;

- 2009 to 2007, Utility divisions manger for the Docklands Light Railway (DLR) 3 Car Capacity order, covering track and platform extensions on the DLR to allow operation of 3 car trains, project value circa £200m
- 2006 to 2005, Utility Mapping Manger for Crossrail delivering utility mapping of affected areas and diversionary routes for the Crossrail project.
- 2005 to 2004, Seconded to Metronet where I was part of a joint working group from Metronet and Thames Water to find and repair defective water mains that were affecting the operational effectiveness of London Underground.

3.0 New Roads and Street works Act 1991

3.1 The New Roads and Street works Act 1991 (NRSWA) is the main legislation for this work; the act is supported by 5 approved codes of practice. Two of the codes of practice (COP) dictate the data input from the owners and the process for agreeing a diversion with the owner's of buried apparatus:

1. Measures Necessary Where Apparatus is Affected By Major Works (Diversionary Works)
2. Code of Practice for Recording of Underground Apparatus in Streets

4.0 Measures Necessary Where Apparatus is Affected By Major Works (Diversionary Works)

4.1 This code of practice is complex and generally poorly understood by the construction industry.

4.2 The code requires that utility diversions are agreed with the owners of buried apparatus, no powers are provided via the code or Transport and Works Act Orders (TWO) to force diversion of apparatus. This places a massive amount of power into the owners hands knowing that the longer they stall the reaching of an agreement the entire construction project will be held to ransom, thus parts of the code which do not suit the owners such as cost sharing and reductions in cost for betterment or deferral of replacement are ignored with the cost being passed on to the party funding the scheme.

4.3 TWAOs only provide the right to cost sharing under the NRSWA COP this again is poorly understood with people assuming that the TWAO provides powers to force the diversion of utilities the reality is the TWAO only allows a 7.5% or 18% margin of cost sharing to be applied if this can be agreed.

4.4 The document is currently out of print with the stationary office only able to supply photocopies.

4.5 No formal qualification or training is available to support the understanding and implementation of the process outlined by this code.

4.6 From my experience I would estimate that 95% of the utility diversions happening in the United Kingdom do not follow the intent of the code. The primary reasons for this is a lack of understanding of the requirements by staff of all parties involved and constant delaying tactics by the owners of apparatus who will not provide agreement to a diversion unless the scheme is cash positive in there favour.

5.0 Code of Practice for Recording of Underground Apparatus in Streets

5.1 Section 79 of the NRSWA details the requirements for owners of apparatus buried in a street to record the location and to make records available for inspection. This is detailed in a code of practice for Recording of Underground Apparatus in Streets.

5.2 The intent of the code is that all apparatus present within the street should be recorded to a accuracy of 300mm with some exceptions. Most records supplied by apparatus owners have an accuracy of 1 to 5m the codes fails to provide and guidance on what coordinate system should be used to record the location of apparatus.

5.3 Health and Safety Guidance note number 47 (HSG47) requires that the person undertaking excavation works in the street locates at there expense all pipes and cables within the area to be excavated. In the event that a cable or pipe is damaged by the excavation the regulatory powers require the party undertaking the excavation to compensate the owner of the pipe or cable, including compensation to customers of the owner. and all cost incurred with the repair regardless of weather the owner has an accurate record of the location of the apparatus.

5.4 The apparatus could have only been installed a few months before the excavation works commence and the party undertaking the works is at fault, the owner has no incentive to incur the cost of updating the record drawings.

5.5 An owner has no obligation to record the location of supply pipe and cables from the main pipe or cable to the building. Thus if measured by quantified of pipe / cable length the regulations of this land permit up to 50% of all apparatus buried in a highway not to be recorded at all.

5.6 This is the main issue with utility diversions the only party with a requirement to understand what is in a highway and how it interconnects is the organisation initiating the diversionary works. Hence the use of utility mapping companies who produce surveys to no national standard or specification to provide best endeavours to map the under street location of apparatus.

5.7 There is no requirement for apparatus owners to ensure that items places in the ground can be detected from the surface. Fibre optic cables, gas and water pipes are only detectable via ground penetrating radar (GPR). No accredited training programme or qualifications exist for the staffs who undertake utility mapping surveys.

5.8 The route cause of all problems encountered in utility diversions is poor record keeping by the owners. Section 79 of the New Roads and Street Act works allows the prosecution of companies who fail to meet their duties for recording the location of apparatus but nobody enforces the existing powers. When was the last time checks were carried out under section 79 of the NRSWA?

5.9 Every construction company is faced with the same issues relating to utility diversions for transport schemes due to regulatory failures and a lack of leadership on training and supply of updated COPs under the NRSWA. This allows the owners of apparatus mainly the utility companies to hold a project to ransom, the cost of which is passed back to the government or sponsor for the works.

6.0 Recommendations for Action

6.1 Appoint a appropriate body to develop and implement a one or two day training course on the Measures Necessary Where Apparatus is Affected By Major Works (Diversionary Works) code of practice.

6.2 Assign the enforcement of the power provided under section 79 of the New Roads and Street works Act to a body who will proactively police the data provided by apparatus owners.

6.3 Update and redraft with support from the campaign for clear English Measures all codes of practice under the new Roads and Street works Act 199.

6.4 Reprint the Measures Necessary Where Apparatus is Affected by Major Works (Diversionary Works) code of practice and raise the awareness of the code within the construction industry.

6.5 Introduce a British Standard for utility mapping by ground penetrating radar supported by appropriate training and qualifications