Public transport technology in the United Kingdom: Annual Survey 2010

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March 2011

Executive summary

Background

1   This document has been prepared by Centaur Consulting Limited under contract to RTIG Limited. It represents results of the UK's 2010 Public Transport Technology Survey conducted by RTIG with the aid of grant funding from the Department for Transport.

2   This survey is based on information received from Local Authorities in response to a questionnaire issued during January 2011. This year the questionnaire was for the first time web-hosted by courtesy of DfT, with completion undertaken through webforms; the response rate and quality compared well with historical returns.

3   This survey assesses the implementation of public transport technology on buses, at stops and other locations and on other modes of transport at end-2010, with projections for end-2011 and end-2012. It focuses on the use of Automatic Vehicle Location (AVL) and the dissemination of Real Time Information (RTI) but also covers other public transport technologies such as smart and integrated ticketing and audio-visual facilities. It covers the major issues which arose during implementations which had a major impact on timeliness, cost or functional delivery.

Equipping the UK Bus Fleet

4   The steady rise in equipped buses since 2002 has continued this year after a pause last year. The number of equipped vehicles has risen to 21,414 buses (48% of the total UK bus fleet of 44,923) and 3.3 billion (62%) estimated bus passenger journeys occurred on equipped buses. The increase this year is almost entirely the result of growth among non-metropolitan areas.

5   Overall there has been a rise of 1,607 equipped buses between 2009 and 2010. Three regions are largely responsible for this rise: East of England, the South East of England and Scotland each with a rise of over 600 buses. There have been much smaller movements, both up and down, in the other regions.

6   London continues to dominate with all 8,200 buses equipped with tracking equipment. This represents 38% of the total equipped fleet. No other region has 100% of its fleet equipped. Non-metropolitan areas now also represent 38% of the total equipped fleet, with 8,129 buses equipped. Metropolitan areas represent 22% the total equipped fleet with 4,765 equipped buses.

7   Scotland has also seen a rise in the number of equipped buses from 1,542 to 2,152 (46% of the total Scottish bus fleet), a rise of 610 equipped buses since end-2009. By contrast, Wales seems to have had a slight drop this year from 235 buses equipped in 2009 to 209 buses in 2010.

Dissemination

8   Installation of physical displays in the UK continues to look pretty flat. Although there has been a 6% rise in physical displays from 9,682 to 10,292, this followed a 4% fall last year from 10,054 in 2008.

9   However, although 3 line LED displays still account for the majority of current installations, new installations continue be disproportionately full-screen displays, which now account for 21% of all displays. The growth in signage in England is almost entirely in full screen displays; by contrast, most new 3 line LED displays were in Wales. It looks as if some of the growth in England in full screen displays is replacing LED displays.

10   Stops covered by virtual dissemination outnumber physical signs, with SMS covering the largest number of stops with over 100,000. LA websites and WAP are the next largest virtual dissemination technologies, all covering between 80,000 and 90,000 stops. Bear in mind that some stops are covered by more than one dissemination mechanism. All methods of virtual dissemination have seen a rise this year with SMS still covering the most stops.

11   WAP is not far behind at 80,475 and looks set to rise further next year, matching LA websites in that year. Transport Direct Portal and Other Websites cover 64,347 and 58,728 stops respectively.

12   Increasingly, LAs seem to be providing information through mobile apps.

Equipment Performance

13   The difference between average design lifetime and average actual lifetime has continued to narrow to almost negligible differences. Replacement is primarily the result of faulty equipment or (for at stop displays) of vandalism, though obsolescence has been growing over the last several years. This is not surprising, and indeed should be expected as these systems begin to age.

14   Discontinuation largely happens as a result of the cost of operation and the failure to perform, although there were a number of other reasons cited.

Smart and Integrated Ticketing

15   Overwhelmingly, LAs will be using the ITSO protocol; 98% of respondents indicated that they would use ITSO.

16   14 LAs indicated that they had ITSO scheme operating licenses in 2010, though this is projected to rise to 26 in 2011. 14,465 buses or about 32% of the bus fleet were fitted with smartcard enabled ticket machines in 2010. This is projected to rise to 22,495 (50% of the fleet) in 2012.

Audio/visual Equipment

17   The number of at stop speakers has continued to rise, from 2,456 stops in 2009 to 2,848 stops in 2010. This remains a small proportion of all stops in the UK.

18   Audio/visual provision on buses tells a similar story. All on-bus A/V technology saw a slight fall this year. Other than in London, A/V is limited to a few small systems which usually only cover a small number of buses. Outside London, about 1500 buses are fitted with visual next-stop displays, but only about 100 have any kind of audio facility.

Rail Alignment

19   Most LAs who responded reported at least one train company operating in their area, although many had 2 or more. 24 were making use of schedule data. Those that were, most commonly were using schedule data for journey planning via the web. A similar number (20) make use of real time data, and this is also primarily used for journey planning via the web.

20   There appears to be very little collaboration with train companies for the purposes of sharing train schedule data – only 8 LAs – and only 2 more indicated plans to do so in the future.

Expenditure

21   Expenditure has fallen for the third year running from £26.7M in 2009 to £18.0M in 2010, well down on the peak in 2007 of £62.9M. However, the response rate for this section was considerably down on the 86% last year to 63% which may mean that the 2010 figure is a low estimate.

22   London remains the highest spending region, accounting for 54% of all expenditure on RTI, although its expenditure has dropped in 2010 by £3M to £9.8M. Most of the regions saw drops since last year with the exception of Yorkshire and the Humber and the Southwest of England. In Scotland, no regions saw a rise in expenditure although SWESTRANS was unchanged since last year.

23   For smart and integrated ticketing systems, 75% of expenditure is covered by government grant. Only £1.4M of expenditure is provided other than via this DfT funding mechanism.

Issues

24   The four issues which have the highest impact on LAs are the same as in 2009: financial considerations, availability of power supply, bus fleet movement and cost of maintenance. However, although the same four issues dominate, the level of concern across all issues has fallen significantly.

25   "Financial considerations" has been a concern since 2004, and has now been the primary concern for two years. This is likely to be a reflection of the current economic climate at least in part. Similarly the cost of maintenance has ranked in the top 4 for the second year, but this may be a reflection of the age of some of the systems.

26   Finally, we asked LAs to rank on a scale of 0-5 how high a priority they attributed to each policy goal. Improving the quality and availability of information were the two top ranking goals. However, all the goals scored between 3 and 4 and most of them scored between 3.8 and 4.0, so the differences between them were very small.

List of contents

1 Introduction

1.1 About this document

1.1.1 This document has been produced by Centaur Consulting Limited (Centaur) under a contract to RTIG Limited. It represents results of the UK's 2010 Public Transport Technology Survey conducted by RTIG with the aid of grant funding from the Department for Transport.

1.1.2 This report aims to:

– document and analyse the use of technology in public transport, for passenger information, and other uses;

– assess accurately the current position of system implementation, dissemination and operation within the United Kingdom;

– identify key trends;

– assess the extent to which projections made in the 2009 survey have been realised;

– identify the future expectations for technology implementation within UK and estimate the provision of bus systems by end-2010 and end-2011;

– expand on conclusions and emergent themes from the 2008 Annual Survey.

1.1.3 Data is analysed at both national and regional level to give a broad picture of bus technology systems in the United Kingdom at the end of 2010, and to project national and regional trends for 2011 and 2012.

1.1.4 Northern Ireland has submitted a single return. However, Northern Ireland requested that its information not be shown as separate region, but only be included in aggregate figures for the UK as a whole. We have done this throughout.

1.1.5 Early reports concentrated on the implementation of technologies, the expenditures surrounding implementation and the issues which arise as a result of implementation. However, many systems have been operational now for some years, and in 2008 we began to look at some of the more operational aspects around RTI. This survey continues to track both the implementations of RTI and associated technologies as before, as well as the operation of these systems.

1.2 Approach

1.2.1 This study has been performed using the following methodology:

– a questionnaire for authorities was designed by Centaur Consulting Ltd on behalf of RTIG;

– the Department for Transport, Statistics Travel Division hosted the survey electronically;

– each UK local authority was sent a username and password for access to the DfT site and were asked to complete the questionnaire, and where necessary followed up to catch possible misunderstandings. In some cases one survey return covered a number of local authorities;

*Figure 1.1: Data is analyzed both at national and regional level
to give a broad picture of RTI in the United Kingdom at the end of 2010*

- data was analysed regionally as well as at national level – Wales and NI being treated as each a single region (see Figure 1-1)[1];

- data for the number of passenger journeys on local buses, by region, was taken from the spreadsheet "Annual Bus Statistics 2009-10 - Passenger Journeys" (available from the Department for Transport website); note that Scotland's figures are no longer available with metropolitan figures separately identified;

- based on the previous year's returns, we try to ensure that those LAs which have fleet size estimates were based on data from the Little Red Book 2010 (published Ian Allan Publishing), excluding open-top and vintage vehicles; coaches (mini, midi, single decker and double decker); and minibuses (fewer than 16 seats);

1.2.2 This year, we had a high return rate. We distributed a total of 136 questionnaires. Of these, a total of 108 responses were returned – 62 of which were from local authorities with fully operational RTI systems. This compares with a total of 105 responses returned last year – 56 of which were local authorities with fully operational RTI systems. We expect the picture this year to be a good comparison with last year in most sections.

1.2.3 Every year, known schemes are targeted for inclusion in the current year's data. This helps to prevent large fluctuations in the data. This year we had a target list of 28 and received 27 (or 96%). Not all target returns completed all of the sections.

1.2.4 All survey questionnaires are collected in the strictest confidence and all data is aggregated to prevent any one LA being identifiable. The exception to this is London which is separated out as a distinct region because of local anomalies. London is fully aware of this when they submit their questionnaire. Centaur Consulting Ltd is registered with the Information Commissioner for Data Protection purposes and does not share the information collected with third parties.

1.2.5 Where a Local Authority has returned but entered no data for a particular question, we also enter no data into the model. For example, because it is difficult for LAs to project forward into future years, they may not enter anything. We do not assume that we can carry forward figures into future years. We therefore often get the case that there are apparent falls between the current year and future years. All projected figures should be treated therefore with caution.

1.2.6 The number of passenger journeys on equipped vehicles is calculated throughout by multiplying the number of passenger journeys for the region by the proportion of the relevant fleet equipped. This is equivalent to assuming that authorities equip buses randomly (rather than, say, equipping popular routes first), which is likely to result in a conservative assessment.

1.3   Acknowledgements

1.3.1 We would like to express our gratitude, once again, to all respondents for their time and patience providing input to this survey.

1.3.2 We would also like to thank the Department for Transport, Statistics Travel Division for kindly hosting the survey this year.

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[1]   Appendix A details the authorities and the Regions to which they belong.

2 Equipping the UK bus fleet

2.1 Introduction

2.1.1 This section examines the current deployment of RTI technology within English, Welsh, Scottish and Northern Ireland local authorities at end-2010. In addition it reflects on the key trends and events that have occurred in the RTI market since the first survey was carried out in mid-2002. It also draws upon six years of Great Britain data and three years of complete United Kingdom data: Scotland has been surveyed since 2005, Wales since 2004 and Northern Ireland since 2008.

2.1.2 This section focuses on the number of RTI equipped buses in GB and the percentage of passenger journeys taken on RTI equipped buses. Both national and regional trends are examined, as well as projections for 2011 and 2012.

2.2 Current position in UK

Equipped Buses

2.2.1 62 local authorities (57% of UK respondents) reported that they currently have operational RTI systems covering approximately 243 towns and cities with a population over 10,000. This compares with 54% of equipped respondents and 167 towns and cities covered in the 2009 survey.

2.2.2 At the end of 2010, 21,414 buses (48% of the total UK bus fleet of 44,923) were fitted with on bus tracking units and 3.2 billion (61%) estimated bus passenger journeys occurred on equipped buses.

2.2.3 The number of equipped buses in UK has risen by 1,607 in the past year from 19,807 to 21,414. The RTI equipped fleet now accounts for 48% of both the UK bus fleet GB bus fleet.

2.2.4 Table 2.1 below outlines the number of equipped buses in GB[2].

Region	Size of fleet	Number of equipped buses	Percentage of fleet with this equipment	Percentage of GB equipped fleet	Percentage of passenger journeys on equipped vehicles
England	37,096	18,733	50%	89%	69%
Scotland	4,675	2,152	46%	10%	46%
Wales	1,745	209	12%	1%	12%
GB Total	**43,516**	**21,094**	-	**100%**	-

Table 2.1: Current GB bus fits

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[2] Although Northern Ireland participated in this survey, they requested that their data not be shown individually. Therefore it has been excluded from this table, as well as some others in this document.

2.2.5   Table 2.2 below shows the proportion of the fleet in UK which was equipped with each type of on bus equipment at end-2010 (see also section 5 for ticketing and on-vehicle passenger information systems):

Equipment type	Number of buses equipped 2009	Number of buses equipped 2010	Percentage of UK fleet with this equipment 2010	Change since last year (in buses)
Tracking equipment	19,807	21,414	48%	1607
Driver communication equipment	16,874	14,766	33%	-2108

Table 2.2: UK Bus fits (at end-10)

2.2.6   In 2010, tracking equipment on buses has increased by 1,607 buses, a rise of 8% on 2009 figures.[3] There has been a significant drop however in the number of vehicles equipped with driver communications equipment, with a decrease of 2,108 buses equipped, a fall of 12%; this is predominantly due to reduction within a single metropolitan authority (just over 1500).

2.2.7   There are currently four regions in England that have more than 50% of their fleet equipped with RTI tracking equipment: London (100%), Yorkshire and the Humber (71%), the Southwest (63%) and the South East (55%). In Wales, 12% of their fleet is equipped, while in Scotland 46% of their fleet is equipped. London represents 38% of the total UK equipped fleet, Yorkshire and the Humber has 15% of the UK's equipped fleet, the South East has 12% and Scotland has 10%. All other regions account for under 10% of the UK's total equipped fleet.

2.2.8   Table 2.3 below shows the number of equipped vehicles by Region and the change since 2009.

GO Region	Number of Equipped vehicles 2009	Number of equipped vehicles 2010	Percentage of regional fleet equipped 2010	Change in numbers of equipped vehicles since previous year
London	8,200	8,200	100%	0
East Midlands	604	167	5%	-437
East of England	614	1217	35%	+603
North East	587	397	25%	-190
North West	488	731	13%	+243
South East	1842	2467	55%	+625
South West	1613	1702	63%	+89
West Midlands	840	742	28%	-98
Yorkshire and the Humber	2922	3110	71%	+188
Wales	235	209	12%	-26
Scotland	1542	2152	46%	+610

Table 2.3: Number of Equipped buses by Region and changes since 2009

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[3]   Audio/visual technologies on buses which in past surveys have been in this section have been moved to the Chapter entitled Traveller Services. This means it is discussed with audio/visual technologies at stops.

2.2.9   PTEs represent approximately 22% of the total equipped fleet with 4,765 buses equipped and shires[4] represent 38% of the total equipped fleet with 8,129 buses equipped. The rise (25% since last year) in equipped buses in the shires is marked after a flat 2009.

2.2.10   Two regions show very little change since last year, showing an increase or decrease of 0-50 buses. However, the majority of regions show larger changes in equipped buses since last year. These include: The Southeast which is up by 625 buses as a result of an increase in the number of equipped buses within one authority and the reporting of more returns than last year; Scotland is up by 610 buses, primarily because of equipped bus figures submitted by one authority that did not submit a return last year; the East of England is up by 603 buses as a result of more returns than last year; The East Midlands is down by 437 buses as a result of an RTI scheme in the region being switched off; The North West is up by 243 buses as a result of an increase in the number of equipped buses within a number of authorities and increased returns since last year.

Passenger Journeys

2.2.11   The total number of passenger journeys in the UK was 5,356M for 2010. Of these, we estimate that 3,326M (approximately 62%) were on equipped buses[5]. This is almost identical to last year's proportion of journeys on equipped buses (3,219M or 62%) but is slightly down on the 2009 prediction of 3,397M (65%) for 2010 [6].

2.2.12   Unfortunately we have been unable reliably to estimate metropolitan and non-metropolitan "equipped passenger journeys" this year for two reasons. Firstly, Scotland is no longer disaggregating passenger journeys into metropolitan and non-metropolitan areas due to "commercial sensitivities" in the data. Secondly, in the non-metropolitan North East of England the equipped fleet was reported as being significantly larger than the total fleet, and the method of journey estimation turns this into a grossly unreasonable and distorting number.

2.2.13   Figure 2.2 overleaf shows the estimated change in passenger journeys on equipped buses by region since 2009. NB for the reasons cited, the estimate for the North East uses a cruder but more robust method than other regions, and no regional breakdown is given for Scotland.

Devolved administrations

2.2.14   There are currently 2,152 equipped buses in Scotland (46% of the total Scottish bus fleet), a rise of 610 equipped buses since end-2009. Just over half of these equipped buses (54%) are found in the metropolitan areas. This is a significant change since last year where Scottish metropolitan areas accounted for 74% of the equipped fleet, with non-metropolitan areas accounting for 26%. The reason for the increase in equipped buses in Scotland overall and in Scottish non-metropolitan areas is largely because of equipped bus figures submitted by a single Scottish non-metropolitan authority which did not submit equipped bus figures in 2009. Passenger journeys on equipped vehicles in Scotland fell however from 231M in 2009 to 215M in 2010 (a drop of 16M) which is largely due to a reduction in the number of Scottish passenger journeys on buses reported for Scotland in 2010.

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[4]   In this document the term "shires" is used to refer to non-metropolitan authorities, for brevity.

[5]   There are some small discrepancies between equipped fleets reported by LAs, and the fleet size as reported by the Little Red Book; in a small number of cases the "equipped fleet" is larger than the "total fleet". This is not expected to change the figures given significantly.

[6]   This number is slightly different from that reported in the 2009 Survey owing to an arithmetical error, which is corrected here.

Figure 2.2: Estimated passenger journeys on RTI equipped buses at end-2010
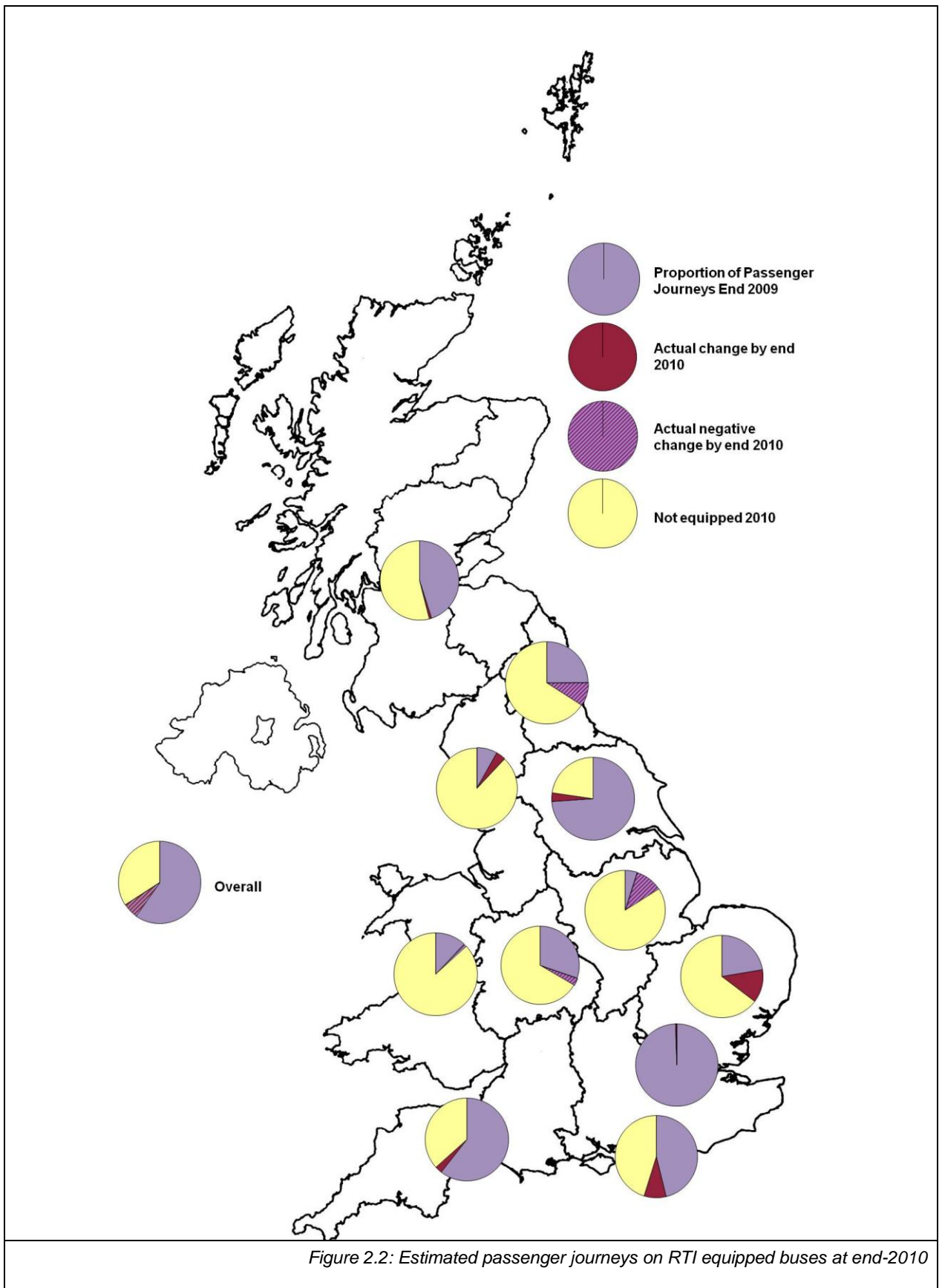
2.2.15 Wales currently reports that it has 209 equipped buses (12% of the total Welsh bus fleet), slightly down since last year when 235 buses were equipped. The number of equipped buses in Wales fell markedly in 2008 when a significant Welsh authority failed to submit figures for buses equipped with tracking equipment. However, this authority does have RTI signs, which suggests that AVL is on at least some of their buses. Unfortunately, we are unable to identify how widespread the tracking equipment is in the absence of the necessary figures. Therefore the number of equipped buses in Wales is almost certainly too low.

2.2.16 During 2010, 12% of all passenger journeys (14M) took place on RTI equipped vehicles. For the last few years we reported that these figures were a significant fall on the 2007 figures and was "almost certainly not real, and is due to the fact that some major Welsh authorities did not report this year". This remains the case this year.

How accurate were projections?

2.2.17 Although the overall projection in 2009 for equipped buses in the GB in 2010 is within 1% of the actual number of equipped buses in 2010, this masks some wide discrepancies in the predictions at regional level (see table 2.4 below).

GO Region	Number of buses equipped 2010	Number of buses predicted for 2010	Difference between actual and predicted
London	8200	8200	0
East Midlands	167	371	-204
East of England	1217	849	368
North East	397	420	-23
North West	731	616	115
South East	2467	2286	181
South West	1702	1247	455
West Midlands	742	2422	-1680
Yorkshire and the Humber	3110	3146	-36
Wales	209	170	39
Scotland	2152	1175	977

Table 2.4: Predicted equipped buses 2009 vs. actual equipped buses 2010

2.3 Projections for end-2011

2.3.1 Estimates made in this year's survey for 2011 project a rise of 571 buses to 21,985, a rise of 3% on the 2010 figures, and representing 49% of the UK fleet. Passenger journeys on equipped buses are also projected to rise by 1% to 3,368M by end 2011. Figure 2.3 on page 17 shows the projected regional change in passenger journeys since 2010.

2.3.2 Both metropolitan areas and non-metropolitan areas expect to see a rise in equipped buses in 2011. London is not expected to change as 100% of the fleet is already equipped.

2.3.3   Table 2.5 below shows the number of buses equipped with various types of on bus equipment. It also shows the proportion of the total UK fleet and the equipped fleet which this represents. The right hand column shows the change in the number of buses with this equipment.

Equipment type	Number of buses equipped 2010	Number of buses equipped 2011	Percentage of total fleet with this equipment	Change in number of buses equipped since previous year
Tracking equipment	21,414	21,985	49%	+571
Driver communication equipment	14,766	16,124	36%	+1,358

Table 2.5: UK on-bus equipment fits by end-2011

2.3.4   Both tracking equipment and driver communications equipment are projected to rise in 2011. Driver communication equipment represents the larger rise with 1,358 more equipped buses projected for 2011. This brings it back closer to 2009 figures. Tracking equipment is projected to rise by a more modest 571 buses to 21,985.

2.3.5   The 2011 projection for equipped buses in Scotland anticipates a rise in the number of equipped buses to 2,267, a rise of 115. Passenger journeys in Scotland are also projected to rise from 215M to 226M in 2011.

2.3.6   In Wales, it is projected that there will be a rise of 79 (38%) to 288 equipped buses in 2011. Passenger journeys on equipped vehicles are also projected to rise in 2011 by 5.3M to 19.3M.

2.4   Projections for end-2012

2.4.1   In 2012, it is estimated that 52% of the UK fleet will be equipped with RTI tracking systems (23,192 buses), a rise of 3 percentage points since 2011 and a rise of 4 percentage points since 2010. Estimated passenger journeys on equipped buses are also projected to rise to 3,522M buses in 2012, a rise of 5% on 2011 projections and 6% on 2010 figures. Figure 2.4 on page 17 shows the projected regional change in passenger journeys since 2011. In this figure, it was necessary to use the crude-but-robust estimator for both NE England and the W Midlands.

2.4.2   As shown in Table 2.6, the number of buses equipped with tracking equipment is projected to rise by 1,207, primarily because of a significant expansion in the West Midlands equipped fleet projected for 2012. In contrast, driver communications equipment on buses is projected to fall by 334 to 15,790. These changes should be treated with caution however as a number of authorities were unwilling or unable to provide information for fleets two years in the future.

Equipment type	Number of equipped buses 2011	Number of buses equipped 2012	Percentage of total fleet with this equipment	Change in number of buses equipped since previous year
Tracking equipment	21,985	23,192	52%	+1207
Driver communication equipment	16,124	15,790	35%	-334

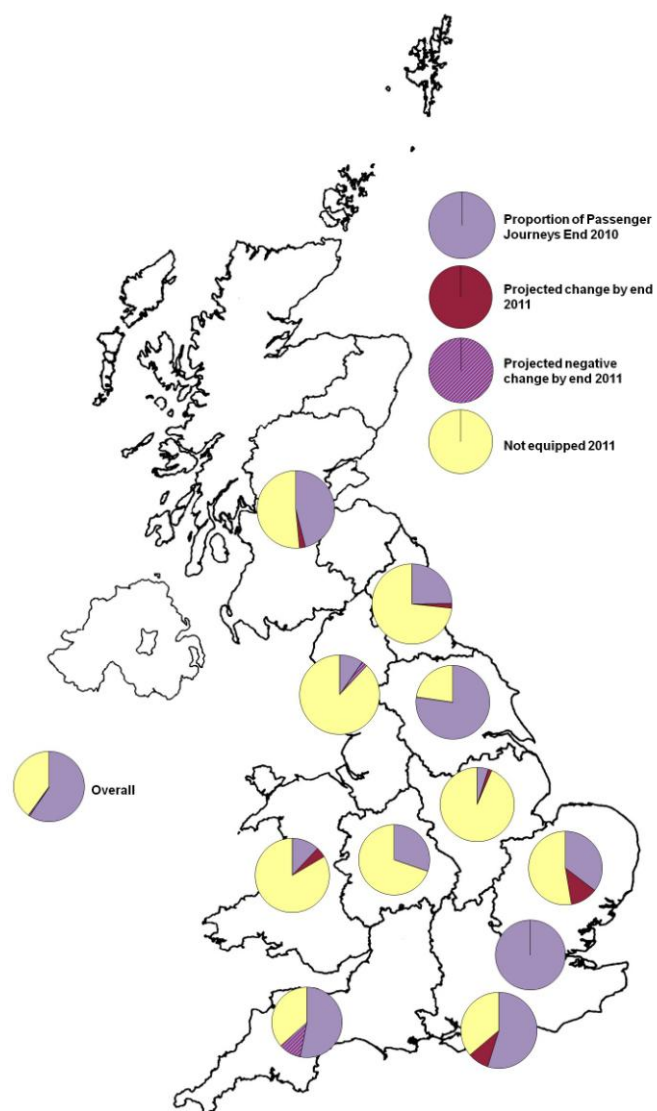*Table 2.6 – UK on-bus equipment fits by end-2012*

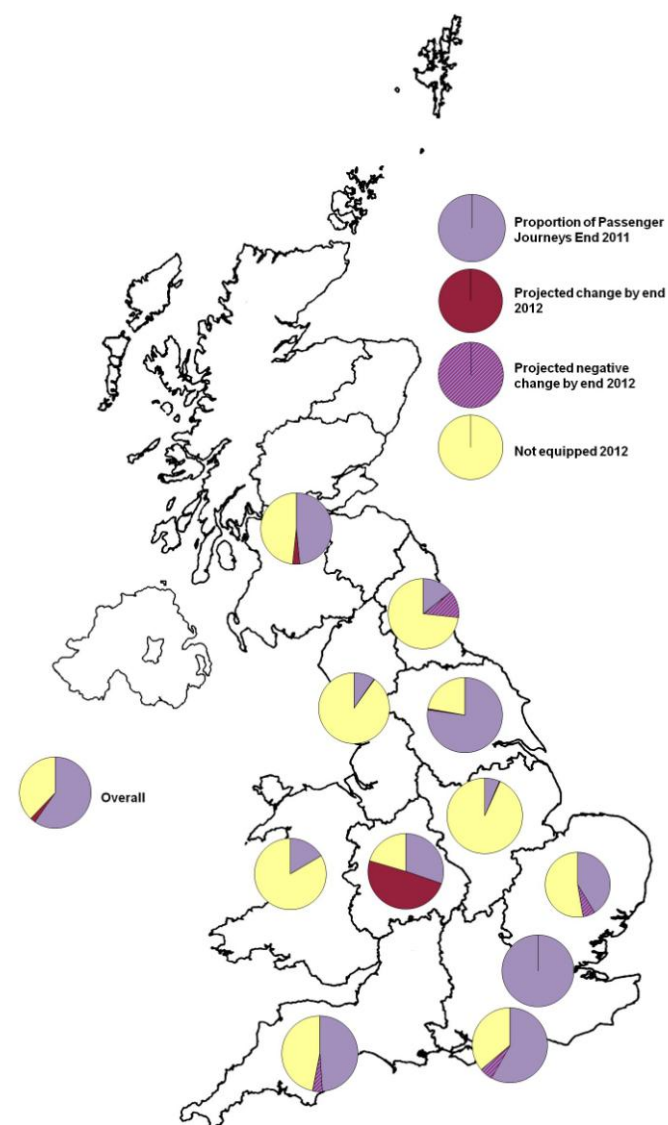Figure 2.3: Projected passenger journeys on RTI equipped buses by end-2011

Figure 2.4: Projected passenger journeys on RTI equipped buses by end-2012

2.4.3   In Scotland, 2012 is expected to see an increase of 149 equipped buses since 2011 to 2416 buses. The number of passenger journeys on equipped buses is also projected to rise by 15M since 2011. The 2012 projections for equipped buses in Welsh authorities remain unchanged at 288 relative to 2011. The number of passenger journeys on equipped buses also remains unchanged.

2.5   Trends: RTI implementation 2002-2012

England (since 2002)

2.5.1   Data on English vehicle tracking implementations has now been collected for 9 years. Figure 2.5 shows the continued growth in the number of equipped buses in England since 2002. The greatest growth was seen between 2002 and 2003 but growth has remained generally steady since (with some small year on year variations).
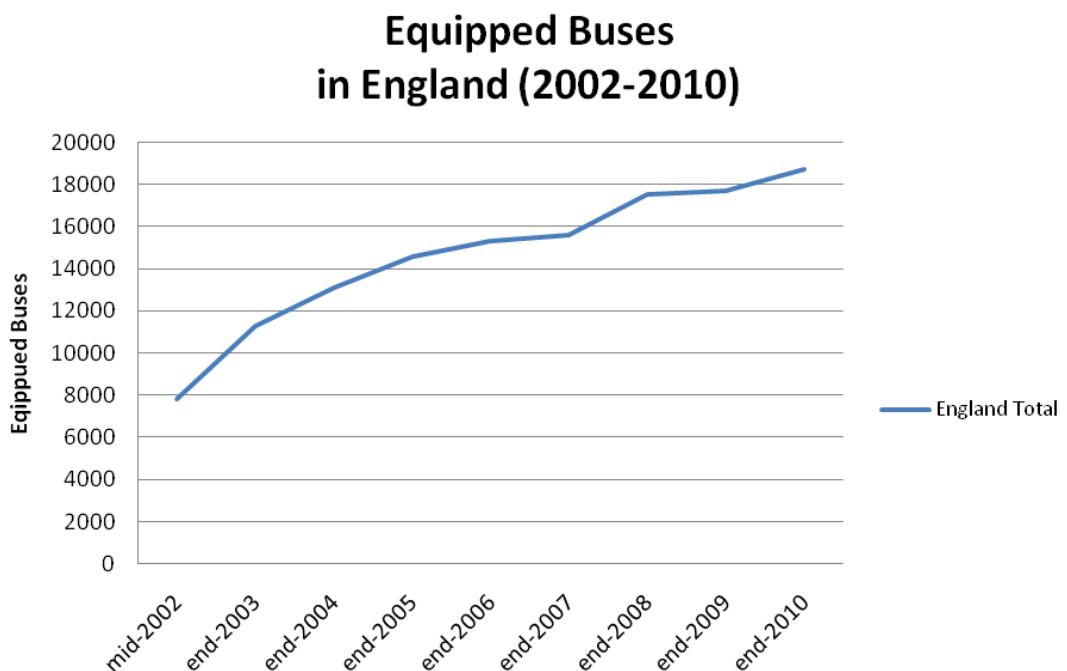
Figure 2.5: Equipped buses in England mid-02 to end-10

2.5.2   Growth has happened at different times for different areas. Metropolitan areas experienced their greatest growth between 2002 and 2006, rising by 3,406 buses in that time. Since 2006 metropolitan areas has levelled off. Non-metropolitan areas also put on significant growth in the years 2002-6 but have continued to grow since. London has stayed essentially fully equipped throughout the period.

2.5.3   In figure 2.6, the dip in metropolitan fits from 2006 to 2007 was caused by a major metropolitan area mothballing its system, pending replanning. 2008 saw a levelling off in all areas and this is continued in 2009 in both London and Metropolitan areas. Almost all growth is accounted for by the growth in non-metropolitan areas which this year have seen a rise of 18%. This rise is due to a combination of an increase in the number of authorities submitting data for this question and an increase in the number of equipped buses from several authorities.
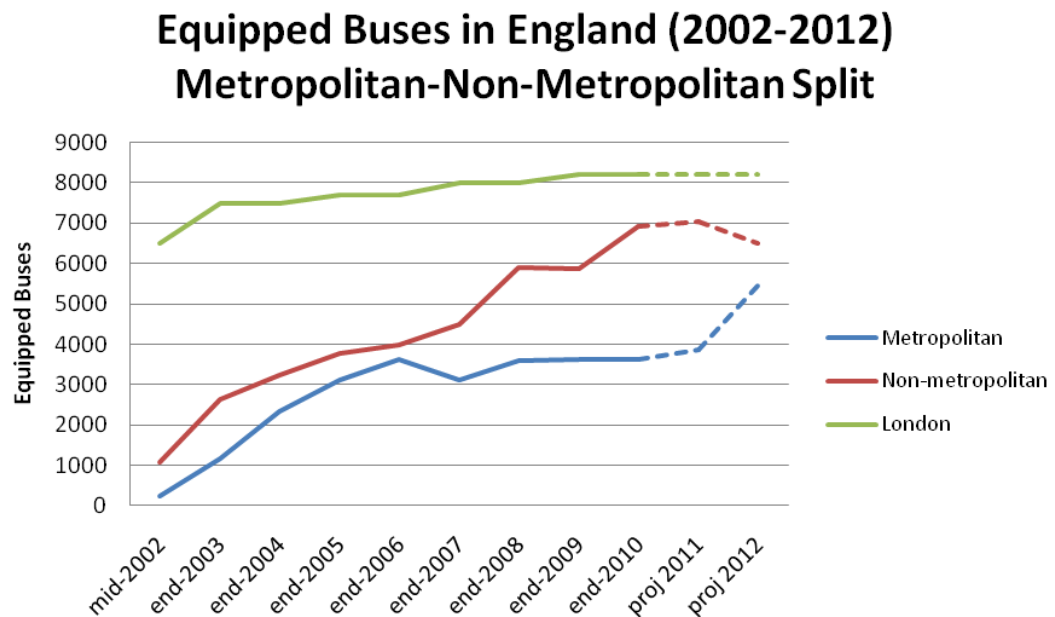

Figure 2.6: Equipped buses in England – metropolitan vs non-metropolitan split

2.5.4   The projections for 2011 and 2012 for London, metropolitan and non-metropolitan areas also vary. All areas look pretty flat in 2011, though metropolitan areas are expected to see a modest rise in the number of equipped buses. Metropolitan areas are then expected to see a steep rise in 2012 which is almost entirely due to a significant expansion in the equipped fleet of a single respondent. By contrast, non-metropolitan areas are projected to drop in 2012, although this may be because as a number of authorities were unwilling or unable to provide information for fleets two years in the future. London is reporting a level projection for the next two years because 100% of its fleet is already equipped.

Great Britain (since 2005)

2.5.5   The number of RTI equipped buses in GB has grown steadily between 2005 and 2010. Last year there was a temporary levelling out in the growth of equipped buses, but in 2010 the growth in equipped buses resumed. Projections indicate that this growth in the equipped GB bus fleet will continue into 2011 and 2012.
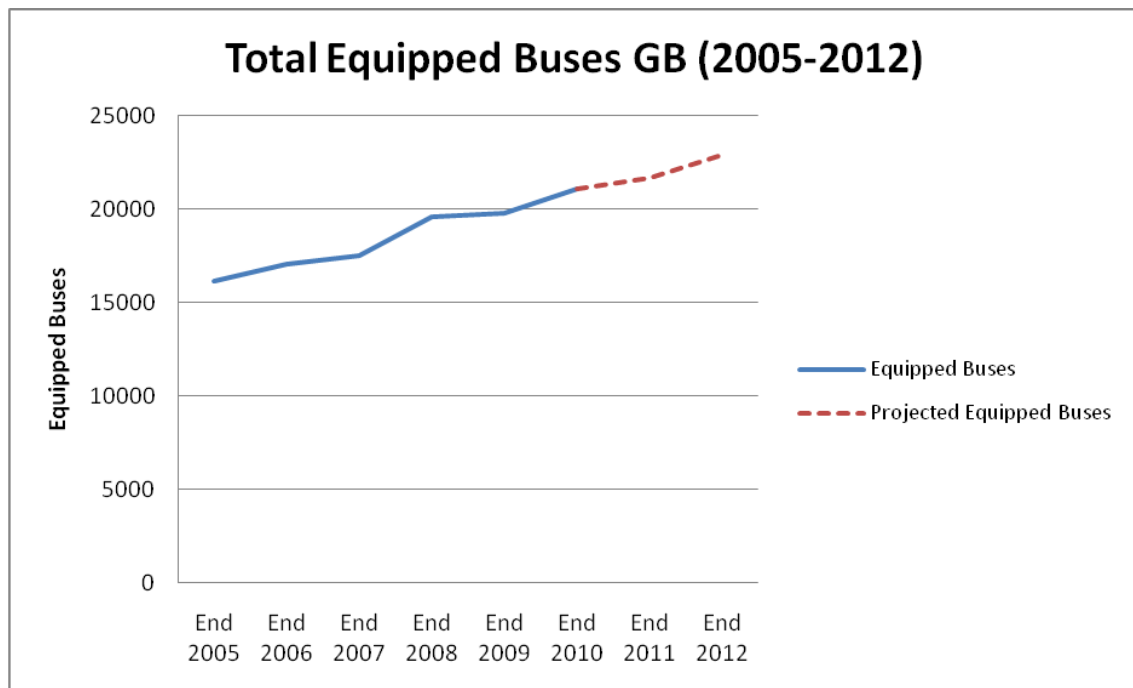
Figure 2.8: Bus fits in GB from 2005-2012

2.5.6   Historically, the predictions for equipped vehicles are not very accurate, although they have been closer recently than they were in the early years. Figure 2.9 shows the two-year ahead projections at each survey since 2002, alongside the actual equipment trend.
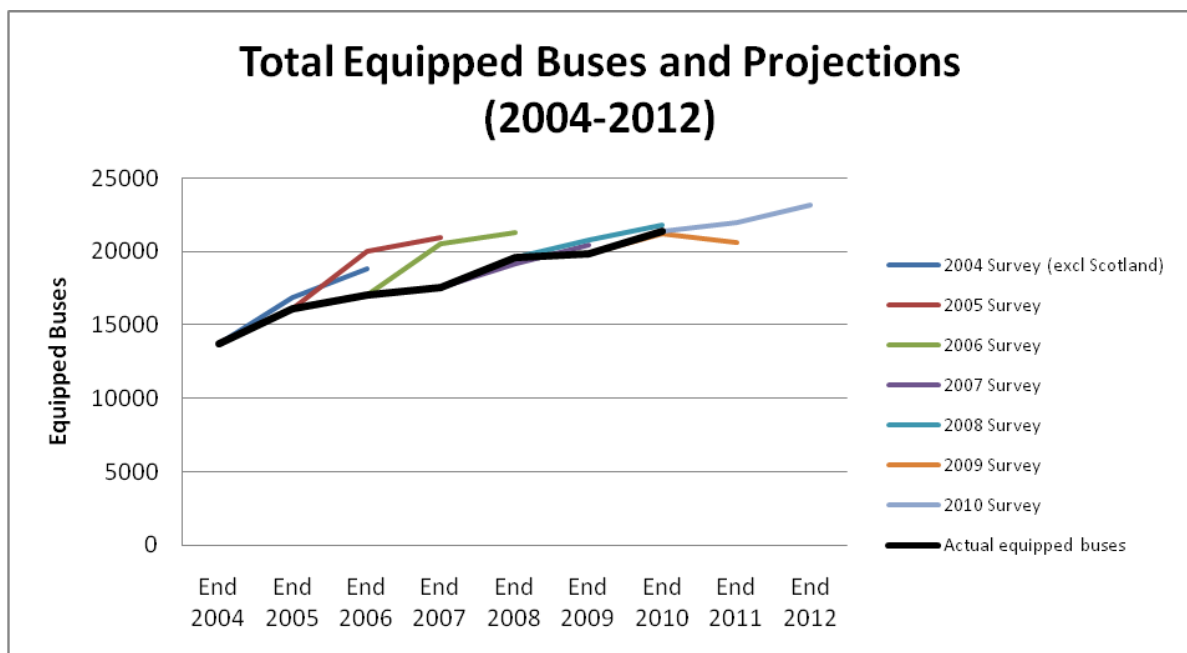
Figure 2.9: Actual and predicted equipped buses in each survey year (for GB)

2.5.7   Figure 2.10 breaks down GB equipment into London/metropolitan/non-metropolitan; compare this with figure 2.6 for England only.

Equipped Buses (GB) 2005-2010
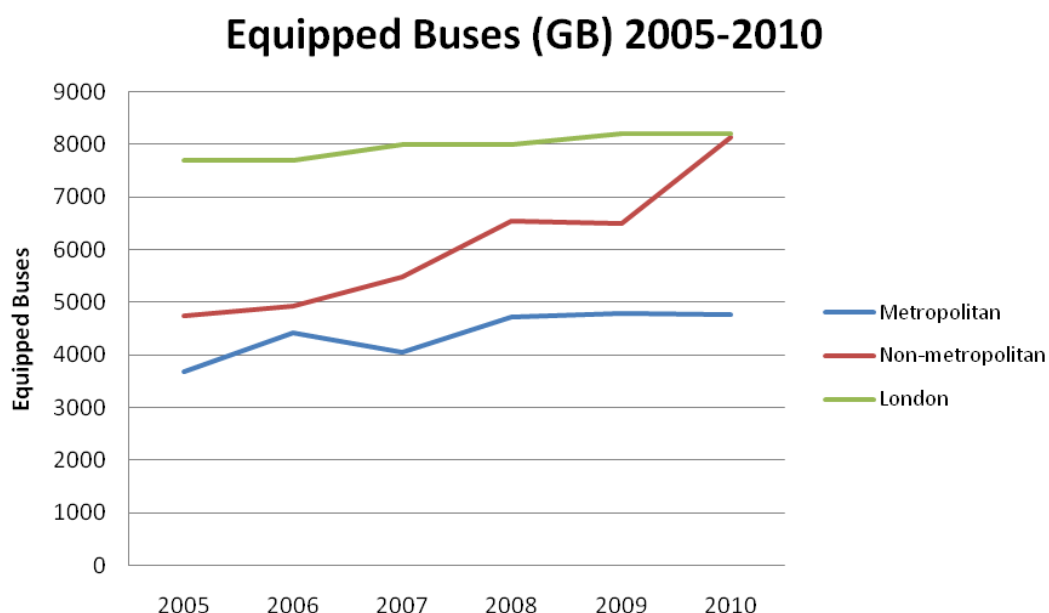
Figure 2.10: Bus fits in GB end-05 to end-10 by type of authority

Regional Trends

2.5.8   Between 2005 and 2010 most regions have seen a rise in the number of equipped buses; the East of England, South East England, South West England Yorkshire and the Humber and Scotland have all experienced steady rises in since 2005.

Equipped Buses by Region (2005-2010)
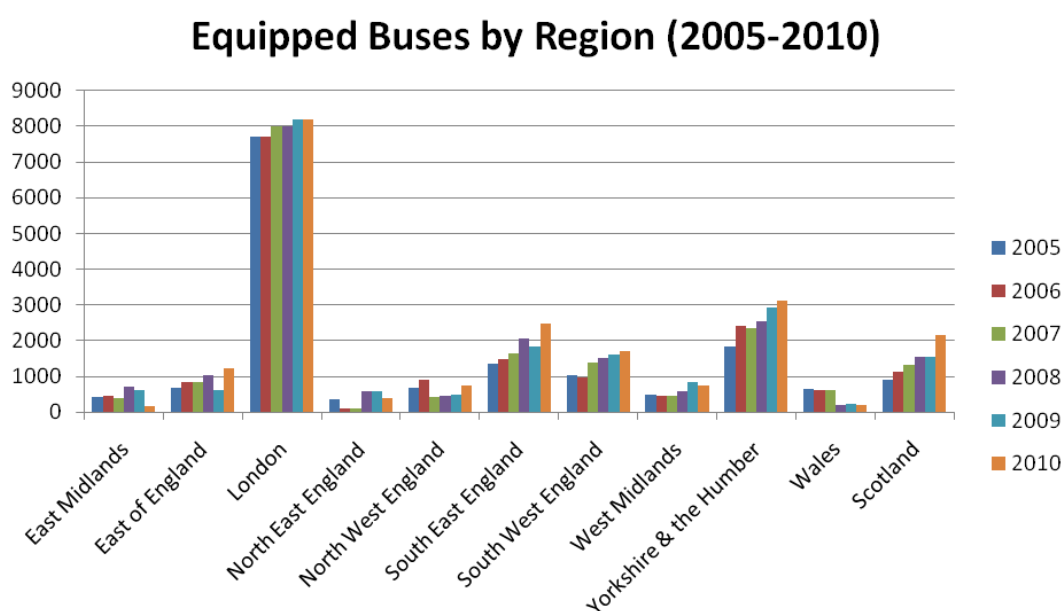
Figure 2.7: Actual Equipped Buses 2005-2010 shown by Region

2.5.9   The East Midlands and Wales have seen drops since 2005. The reason for the drop in 2010 for the East Midlands is due a significant RTI scheme being switched off in the region, in addition to a number of East Midlands authorities not returning this year.

2.5.10   In Wales, the number of equipped buses fell steeply in 2008 and has stayed at that level since that time. The main reason for this fall is because a significant Welsh authority has failed to submit figures for buses equipped with tracking equipment during the past three surveys.

3 Keeping the public informed: the provision of RTPI in UK

3.1 Introduction

3.1.1 This section examines the provision of Real Time Passenger Information (RTPI) to the public within the UK at end-2010 and the projected position by end-2011 and end-2012. This includes both at-stop and 'virtual' methods of RTPI provision such as SMS and websites.

3.2 Current position in UK

RTI physical displays

3.2.1 At end-2010, there were approximately 8,196 bus stops fitted with 3-line or multi line LED signs and a further 2,096 fitted with full screen (LCD or plasma) displays. This is equivalent to 10,292 real time information-enabled physical displays in the UK.

3.2.2 For GB, there has been an increase in sign numbers since 2005 with a particularly sharp increase between 2007 and 2008. This increase was not the result of any single implementation, but of a number of implementations around the country coming on line. Last year by contrast, GB experienced a 4% drop in the number of physical displays. It was reported at the time that this fall was likely to be the result of non-returns and that, should these have been returned, then growth in physical displays would have been flat. This seems to have been borne out by this year's survey where an increased return rate has indicated that levels have just exceeded 2008 levels to a high of 10,101, a rise of 6%. Figure 3.1 below shows a largely flat picture since 2008.
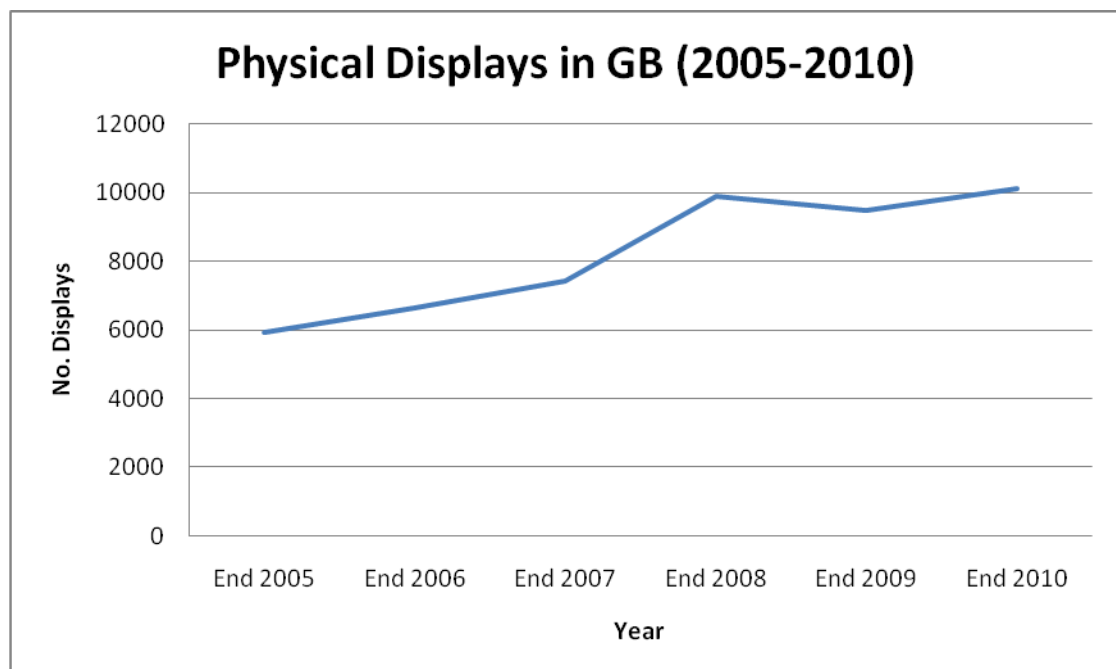
Figure 3.1: The Number of Signs in GB 2005-2010

3.2.3   Figure 3.2 below shows the breakdown of physical displays into 3-line/multi-line LED and full screen (LCD, plasma etc) displays for 2005 to 2010:
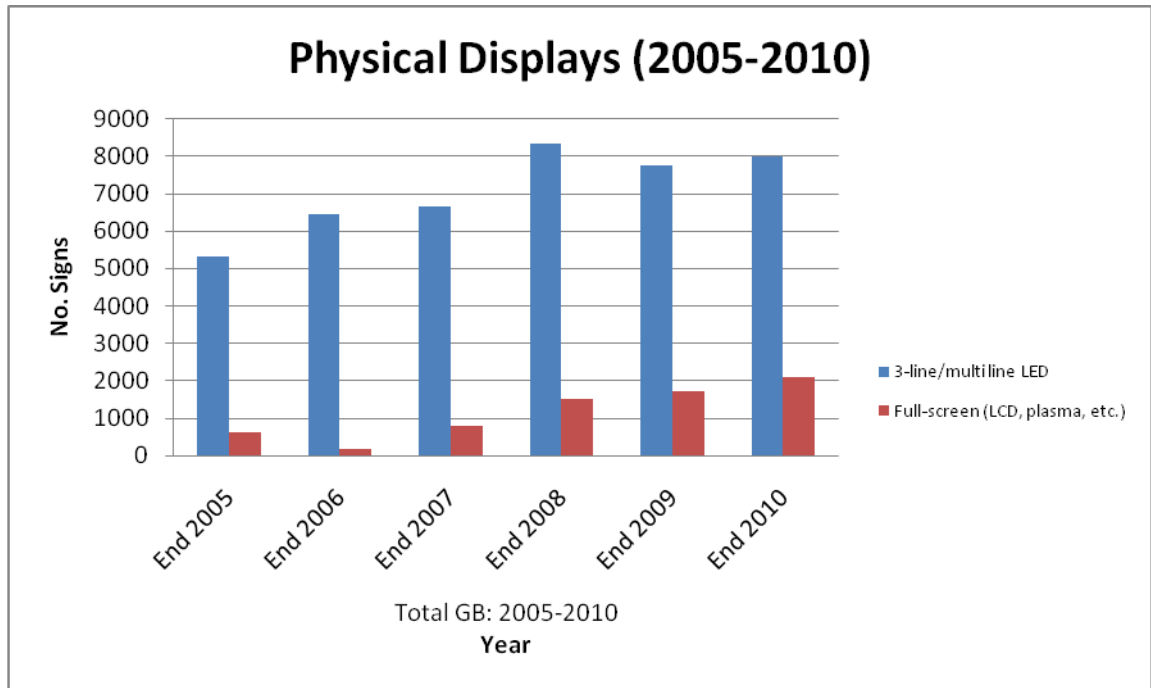
Figure 3.2: Types of Signs on GB 2005-2010

3.2.4   Both 3-line/multi-line LED displays and full screen displays show growth in 2010. However, full screen displays make up the majority of this growth with a rise 356 signs (59% of the 2010 increase), while 3-line/multi line LED displays have increased by 248 signs (41%). Furthermore, the 2010 figures for LED signage is actually down on the 2008 figure, which strengthens the suggestion that the real growth lies predominantly in full-screen displays.

3.2.5   Almost all growth in full screen displays since 2009 is accounted for by English schemes (outside London), while the majority of growth in 3-line/multi line LED displays has occurred in Welsh authorities. These increases are due to a combination of increased reporting and expansion of existing systems.

3.2.6   3-line/multi-line LED displays continue to be the most prevalent physical display type, accounting for 79% of all physical displays with full screen displays accounting for the remaining 21%. This is more or less identical to the 2010 predictions made in last year's survey. However, the difference in proportion between 3-line/multi line LED and full screen displays has narrowed since 2005 when the split was 89% to 11% for 3-line-multi line and full screen displays respectively.

3.2.7   Table 3.1 below shows the split in the position of signage within metropolitan areas, non-metropolitan areas and London:

Position within GB end-2010	No. RTI Displays	RTPI Physical Display Location				
		Shelter	Flag installation	Transport Hub Installation	Private building installation	Other
Metropolitan	3,469	2,498	516	562	23	1
Non-Metropolitan	4,632	2,142	1,456	274	65	12
London	2,000	2,000	0	0	0	0
TOTAL	**10,101**	**6,640**	**1,972**	**836**	**88**	**13**

Table 3.1: RTPI Display Location in GB at end-2010

3.2.8   Note that not all of the RTI displays in this table are accounted for in the physical location (for instance the sum of total shelter, total flag, total hub etc displays is 9549, which leaves 552 displays unaccounted for).

3.2.9   By the end of 2010, the majority of RTI displays were installed either in shelters (70%), the same as last year, or were flag installations (20%), down by 3 percentage points since last year. It would appear that the drop in flag installations has been accounted for by a 3 percentage point rise in the proportion of display installations in public transport hubs, which has risen to 9% since 2009.

3.2.10   The number of both shelter and flag installations has varied slightly, with shelter installations experiencing a rise of 82 displays while flag installations have experienced a fall of 199. The number of signs in public transport hubs has risen to a total of 836 signs since 2009, a rise of 34% over the year. Private building installations have fallen by 12 to 88 signs over the past year.

Virtual dissemination

3.2.11   In 2010, 45 local authorities were reported as using a form of virtual dissemination to make RTPI available to the public, an increase of 2 authorities since 2009.

3.2.12   The two most popular methods virtual dissemination were SMS and LA websites with 35 and 30 LAs offering this service respectively. These results match those reported in 2009. The number of authorities disseminating information using WAP remains at 15 as reported in 2009, but the number of authorities disseminating information using the Transport Direct Portal has risen to 14 and phone hotlines have risen to 13, while Other (3rd party) websites has risen to 15.

3.2.13   This year, the number of LAs using the Transport Direct portal to disseminate real time information rose slightly to 14 LAs from 12 in 2009. This is in line with the 2007 result of 15 LAs. At that time we reported that this was likely to be "a blip" but the consistency of the data over the last 2 years makes this less likely. It is unclear why the data for this particular mechanism has been so erratic in the past and we will continue to monitor the usage of Transport Direct in future surveys.

3.2.14   Stops covered by virtual dissemination outnumber physical signs, with SMS covering the largest number of stops with over 100,000. LA websites and WAP are the next largest virtual dissemination technologies, all covering between 80,000 and 90,000 stops. Phone Hotlines have grown only slightly to 68,111 up from 63, 500 last year. Bear in mind that some stops are covered by more than one dissemination mechanism.

3.2.15   A significant number of stops are now covered by "other" mechanisms. We gave LAs a chance to tell us what those mechanisms were and below is a sample of their responses;

–   Mobile apps (5 respondents)
–   Interactive digital TV (one respondent)
–   "other websites" (one respondent; this was moved to the correct place)

3.2.16   Figure 3.3 below illustrates how virtual dissemination coverage has changed between 2008 and 2010 and how it is projected to change in 2011 and 2012:
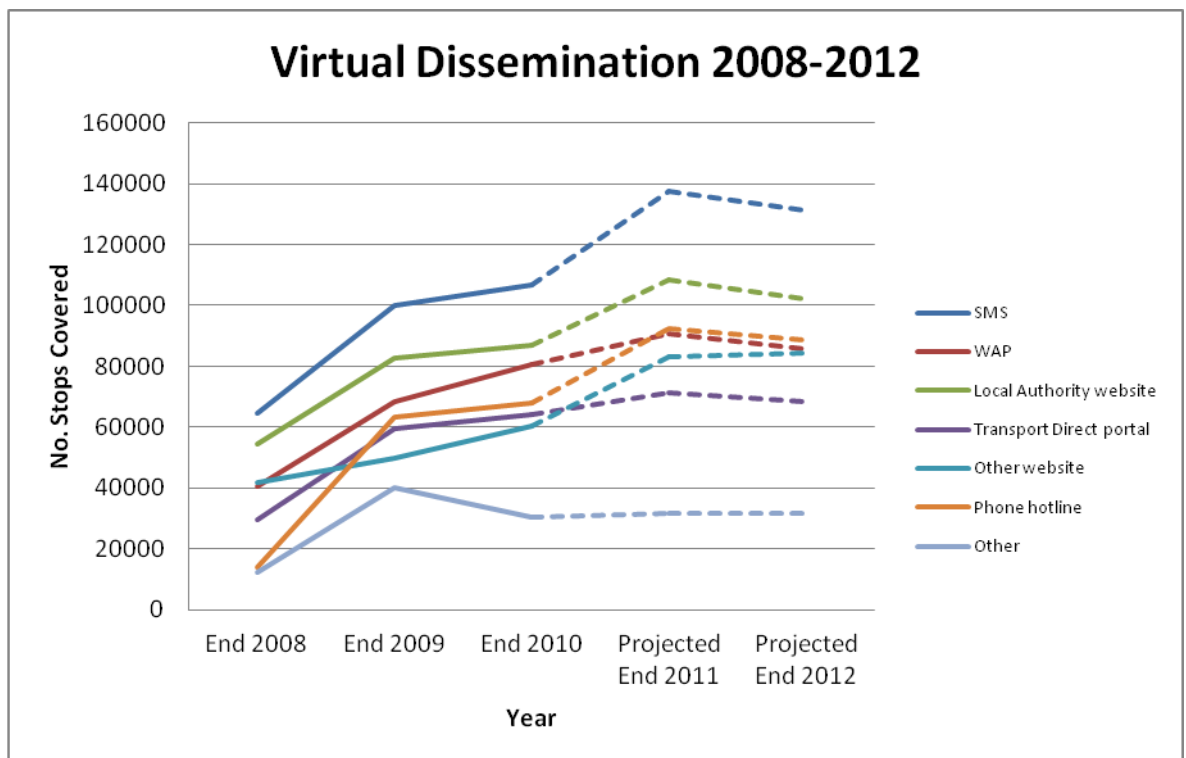
Figure 3.3: LA Virtual RTPI dissemination methods end-08 to end-12 (predicted)

3.2.17   Metropolitan areas still provide RTPI at far more stops than the non-metropolitan areas.

3.2.18   Table 3.2 below shows the number of stops covered by each virtual mechanism in metropolitan, non-metropolitan and London:

	SMS	WAP	LA Web	TD portal	Other Web	Phone	Other
Metropolitan	55,100	56,800	57,400	54,500	48,500	54,500	26,300
Non-Metropolitan	51,703	23,675	29,645	9,847	10,228	13,611	5,791
London	0	0	0	0	0	0	0

| TOTAL (stops) | 106,803 | 80,475 | 87,045 | 64,347 | 58,728 | 68,111 | 32,091 |

Table 3.2: Stops covered by RTI dissemination mechanisms at end-2010

Current position in Scotland and Wales

3.2.19   In Scotland, 2010 data for physical RTI displays showed little change from the previous year with a rise of 41 displays to 1,062. As in previous years, the majority of these displays are either flag installations or shelter-mounted.

3.2.20   This year, there is a mixed picture in the number of stops covered by virtual methods of disseminating RTPI. SMS, WAP and the Transport Direct portal have all experienced falls, whereas the dissemination of information via LA and other websites has risen. The usage of phone hotlines to disseminate RTI is unchanged from 2009. This seems to indicate a conscious shift away from SMS, WAP and Transport Direct and towards websites. The use of SMS, WAP and Transport Direct has fallen because of a number of existing systems have either reduced coverage or removed the service altogether, while the use of LA and other websites has increased because of the expansion of the number of stops covered by these dissemination methods as well as some increased reporting.

3.2.21   Table 3.3 below shows the comparison of virtual dissemination provision between 2009 and 2010 by Regional Transport Partnership:

Region	SMS		WAP		LA Website		TD Portal		Other Website		Phone Hotline	
	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010	2009	2010
HiTrans	2,500	2500	2,500	2500	0	177	2,500	2677	2,500	2677	2,500	2500
Nestrans	1,356	1356	0	0	0	0	0	0	0	0	0	0
SEStran	1,166	628	2,500	2300	2,500	2928	628	0	0	0	0	0
SPT	600	600	0	0	600	600	0	0	0	0	0	0
SWESTRANS	0	0	0	0	0	0	0	0	0	0	0	0
TACTRAN	0	0	0	0	0	0	0	0	4	4	0	0
ZeTrans	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	5,622	5,084	5,000	4,800	3,100	3,705	3,128	2,677	2,504	2,681	2,500	2,500

Table 3.3: Regional Comparison of Virtual Dissemination Provision in Scotland

3.2.22   In Wales, there was a rise of 153 in the number of physical displays to 749, a significant rise of 25%. Nearly all of these were 3-line/multi-line LED displays, and this accounts for 62% of total 3-line LED display growth in GB. A combination of increased reporting and the expansion of existing display networks in Wales has led to this rise. As in Scotland, the vast majority of physical signs in Wales are located either in shelters or on flag/pole. Unfortunately, there is some uncertainty regarding the location of signs, because those returning the survey did not account for all of their signs in this section.

3.2.23   The change in the number of stops covered by virtual dissemination methods varies across methods since 2009. Both the use of LA websites and SMS saw significant drops in Wales with falls of 839 stops (to 1,961) and 684 stops (to 2,700) respectively. Phone hotlines experienced a smaller fall of 54 stops (to 1,461). By contrast, use of the Transport Direct portal has been introduced for the first time this year with coverage of 300 stops. The use of other websites has also risen by 361 to a total of 1,961. The number of stops covered by WAP is unchanged at 1,600.

Changes in GB since end-2009

3.2.24   All virtual dissemination methods have risen since 2009. Coverage of the majority of methods (Other website, SMS, Transport Direct portal and LA Website) has shown growth of between 4,000 and 9,000 stops. WAP has seen slightly larger growth with an expansion of just over 12,000 stops (18%).

3.2.25   In 2010, the number of LAs providing virtual dissemination was largely unchanged or saw slight increases across almost all dissemination methods. Only the number of LAs providing SMS messaging fell, and this was only by a single authority, bringing the total to 35. LA websites and phone hotlines saw an increase of 3 authorities, bringing the total providing this dissemination service to 30 and 13 respectively. The Transport Direct portal (2) and other websites (1) also saw small increases, both resulting in a total of 14 LAs providing these services. The number of LAs providing WAP was unchanged since 2009 at 15 LAs.

How accurate were projections?

3.2.26   2010 projections made in the 2009 survey were slight underestimates when compared with the actual 2010 data, with a reported increase of 604 displays (6%) in 2010 to 10,101. This results in a difference of 340 between projected and actual figures for 2010.

3.2.27   The percentage split between the proportion of displays that are 3-line/multi line and full screen displays for 2010 matched 2009 projections, with a split of 79% and 21% respectively.

3.2.28   By contrast, the projections for virtual dissemination were less accurate, with most virtual dissemination being underestimated. Phone hotlines were predicted pretty accurately with only a discrepancy of 257 stops covered. Table 3.10 shows the 2009 projections and actual figures for virtual dissemination coverage for 2010:

Methods	Predicted 2010	Actual 2010	Difference
SMS	97,207	106,803	9,596
WAP	69,624	80,475	10,851
LA Website	78,794	87,045	8,251
Transport Direct Portal	61,984	64,347	2,363
Other Website	48,350	60,328	11,978
Phone Hotline	67,854	68,111	-257
Other	42,140	30,491	-11,649

Table 3.10: Actual and projected numbers of stops covered by each virtual mechanism

3.3   Projections for end-2011

3.3.1   Projections for 2011 indicate a significant fall of 1,536 displays (15%) in the number of physical displays. However, the primary reason for this drop is because London reported a reduction of 2,000 3-line/multi line LED displays for 2011. At that time, London will be engaged in removing, replacing and expanding their existing system but there is no firm date for the completion of installation. Therefore, they cannot indicate with any certainty how many signs will be operational in 2011 and have submitted no data for that year. Excluding London, the numbers of physical displays in metropolitan and non-metropolitan areas for 2011 are expected to rise by 288 (8%) and 176 (4%) respectively. 3-line/LED displays are again expected to dominate, accounting for 73% of all physical signage.

3.3.2   Shelter mounted displays are expected to continue accounting for the largest number of display locations, with a total of 5,669 in the UK (63% of total displays). This is a drop in the proportion reported in 2010, but again, the main reason for this is due to the non-inclusion of London data, which accounted for 2,000 shelter installations in 2010. The second most prevalent display location is projected to be at-stop flag/pole installations, with a projected total of 2,158 (24% of total displays). This distribution also applies to both metropolitan and non-metropolitan areas.

3.3.3   Away from stops, the number of displays in private buildings is expected to rise substantially from 91 to 156 displays (73%) in 2011. The number of displays in public transport hubs is also expected to rise from 837 to 955, a rise of 118 (14%).

3.3.4   Table 3.4 overleaf shows the projected distribution of physical displays in 2011 across GB metropolitan, non-metropolitan and London areas.

End-2011	RTPI displays
Metropolitan	3,757
Non-metropolitan	4,808
London	(Not available)
TOTAL	**8,565**

Table 3.4: Predicted RTPI displays in GB at end-2011

3.3.5   The number of LAs providing some form of virtual dissemination is expected to rise by 5 to 50 LAs between 2010 and 2011. Projections suggest that SMS will continue to be the most popular virtual dissemination mechanism used by LAs, with 44 authorities projected to have SMS in place by 2011.

3.3.6   All methods of virtual dissemination are projected to rise in 2011, with SMS projected to experience the largest expansion of stop coverage with a rise of over 30,000 stops (29% since 2009). Phone hotlines will also see a substantial rise of 24,000 which is largely accounted for by London bringing on line their 19,000 phone hotlines. Coverage of other websites and local authority websites are also projected to rise by over 20,000 stops in 2011, with increases of 39% and 28% respectively. WAP, the Transport Direct portal and phone hotlines are estimated to experience increases in coverage of between 5,000 and 10,000 stops.

3.3.7   Table 3.5 below summarises the number of stops predicted to be covered by each virtual mechanism by end-2011:

	SMS	WAP	LA Web	TD Portal	Other Web	Phone	Other
Metropolitan	55,100	56,800	57,400	54,500	48,500	54,500	26,300
Non-Metropolitan	63,405	33,889	51,203	16,887	15,746	18,707	6,791
London	19,000	0	0	0	19,000	19,000	0
TOTAL (stops)	**137,505**	**90,689**	**108,603**	**71,387**	**83,246**	**92,207**	**33,091**

Table 3.5: Number of stops covered by virtual dissemination mechanisms at end-2011

3.3.8   All virtual dissemination methods are projected to rise in non-metropolitan areas, with LA websites, SMS and WAP experiencing the largest rises. In London, projections indicate that 19,000 stops will be covered by SMS and other website. No change is projected across any virtual dissemination methods in metropolitan areas.

3.4   Projections for end-2012

3.4.1   The number of LAs reporting figures for 2012 has not significantly reduced from those providing information for 2010 and 2011. In previous surveys, authorities have not provided data for two years beyond the current year. Because the data came from a smaller sample size (often significantly smaller) it was less reliable than current year data. Nevertheless, projections for 2012 should be treated with caution given they reflect an environment two years in the future.

3.4.2   2012 projections indicate that display numbers are expected to recover in 2012 from the dip in 2011, with the number of total physical displays projected to be 10,954. This recovery is primarily because London's display figures now include the 2,500 displays which were excluded in 2011. However, the picture looks fairly flat only slightly exceeding display numbers of 10,292 reported for 2010. Outside of London, Metropolitan areas are projected to see a small increase of 15 signs while projections for non-metropolitan areas suggest a drop of 311 signs.

3.4.3   Table 3.6 below shows the breakdown of signs in metropolitan and non-metropolitan areas:

end-2012	RTPI displays
Metropolitan	3772
Non-metropolitan	4477
London	2500
TOTAL	**10749**

Table 3.6: Predicted RTPI displays in UK at end-2012

3.4.4   The picture is confusing when we look at sign placement. LAs report significantly more signs when we add up all those in various locations compared to those reported in various types above. The number of physical signs reported was 10,954 while the total number when we add up those in all locations is 11,903. Using the sign placement figures, there is projected to be significant growth in signage between 2010 and 2012 of about 2,354 signs.

3.4.5   If projections are met, there will be some significant shifts in sign placement. Shelter installations are projected to continue being the most prevalent display location accounting for 8,073 or 60% of physical displays. However, flag installations are projected to rise to 4,235 (31% of total installations).

3.4.6   The projected number of authorities who will be providing some form of virtual dissemination remains largely unchanged from 2011 figures with a total of 49 LAs. However, projections for 2012 suggest a significant decrease in the number of stops covered by all virtual dissemination methods, with the exception of other websites projected to see an increase of 1,040. SMS, WAP and LA website see the largest falls of 6,315, 5,049 and 6,599 respectively. This projected reduction is largely the result of a single metropolitan authority not responding to this question.

3.4.7   By contrast, coverage of the majority of virtual dissemination methods are projected to rise in non-metropolitan areas with WAP, the transport Direct portal, other websites and phone hotlines all experiencing increases. Virtual dissemination figures for London remain unchanged from those reported for 2011.

3.4.8   Table 3.7 shows the breakdown of mechanisms across PTEs, shires and London for 2012:

	SMS	WAP	LA Web	TD Portal	Other Web	Phone	Other
Metropolitan	49,100	50,800	51,400	48,500	48,500	48,500	26,300
Non-Metropolitan	63,090	34,840	50,604	19,907	15,186	21,101	6,791
London	19,000	0	0	0	19,000	19,000	0
TOTAL (stops)	**131,190**	**85,640**	**102,004**	**68,407**	**82,686**	**88,601**	**33,091**

Table 3.7: Virtual dissemination mechanisms in use by GB local authorities at end-2012

3.5   Further trends: RTI dissemination 2002-2010

3.5.1   The number of physical displays in England has been monitored by us since 2002 when 2,853 displays were reported. Since then, the number of displays in England has increased to a total of 8,290 in 2010. As displayed in Figure 3.4 below, the majority of this growth occurred between the years of 2002-2004 and 2006-2008. Since 2008 however, growth in English physical displays has been largely flat.
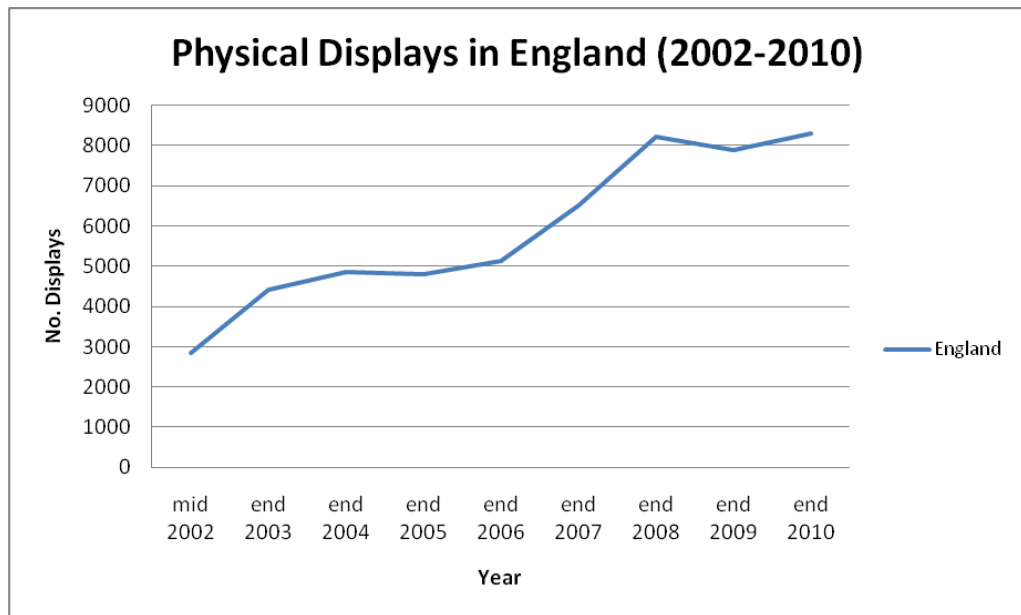
Figure 3.4: Total numbers of physical displays, England 2002-2010

3.5.2   Figure 3.5 below shows the growth in signs in GB by display type.
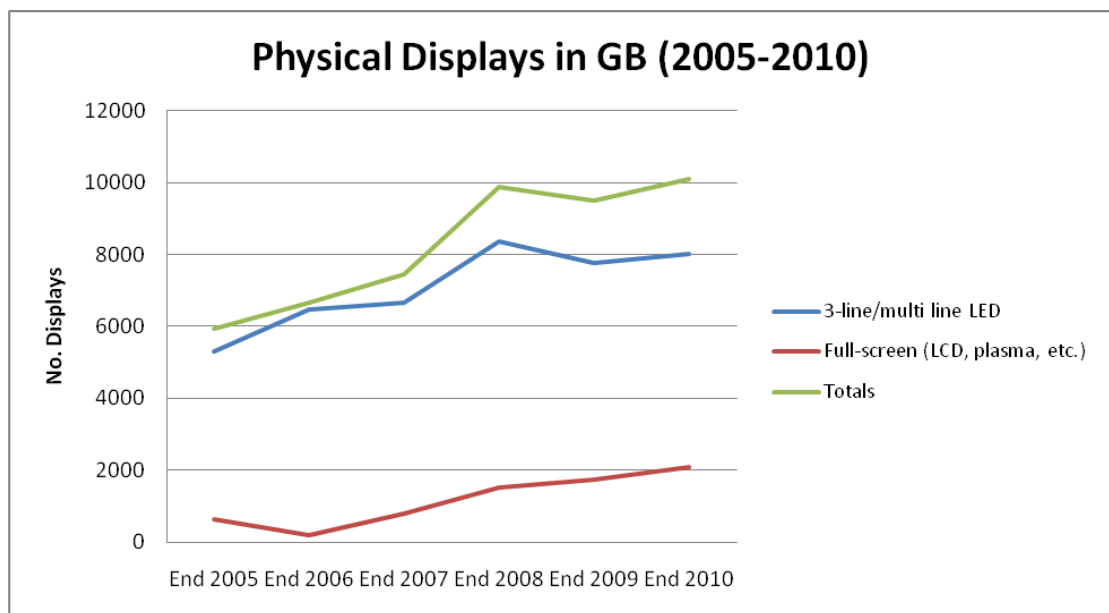
Figure 3.5: Physical displays in GB 2005-2010 by type

3.5.3   The display type of choice has remained the 3-line/multi line LED type throughout the period 2002-2010. However, there is a trend towards an increasing proportion of screens being full screen (see figure 3.6 overleaf). Where the bar chart is showing *projected* numbers of signs, we have shown the area as hatched. The pale blue portion of the 2011 3-line/multi line LED bar represents the 2,500 signs that London will be installing during 2011. These new London displays are included in the 2012 total. Following a rise in 3-line/multi line LED displays between 2005 and 2008, growth in this display type has mostly remained flat between 2008 and 2010 around the 8,000 display mark. Projections for 2011 and 2012 estimate slight growth in the number of 3-line/multi line LED displays, although this will largely depend on when work on London's new displays is completed. The number of full screen displays has increased steadily since 2006 and is projected to continue growing in 2011 before flattening in 2012. However, this reduction in growth for 2012 is contradicted by the figures for sign placement and is therefore likely to be due to under-reporting.
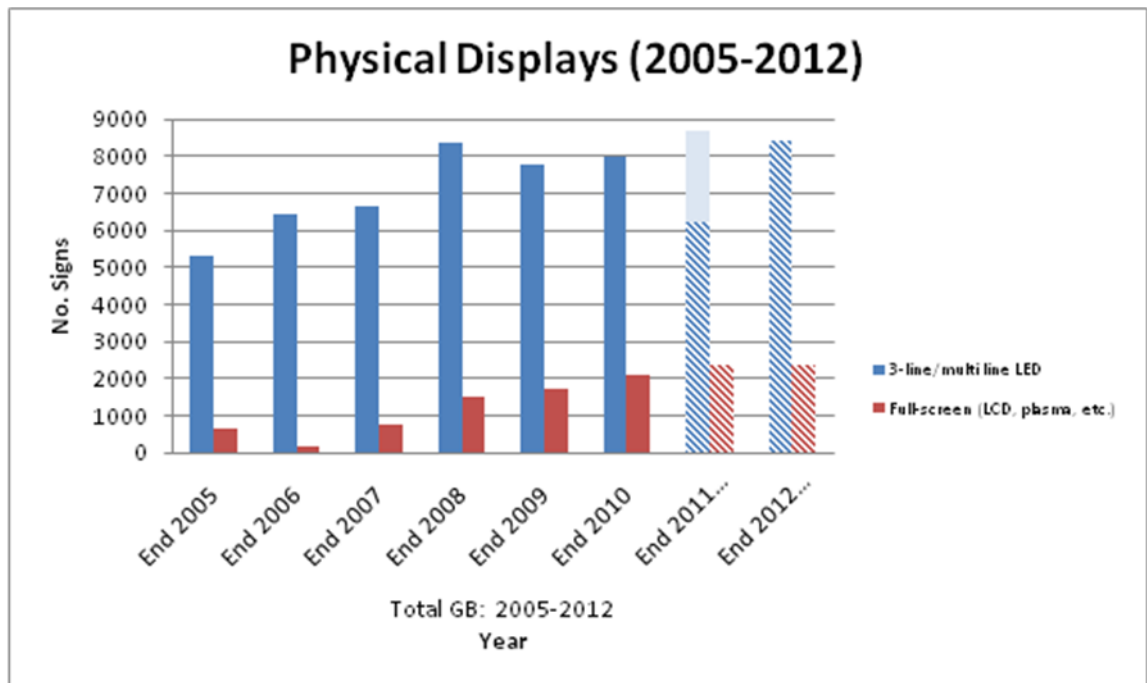
Figure 3.6: Display types in GB 2005-2012

3.5.4   Shelter-mounted display installations remain the most popular with local authorities and account for 70% of signage in GB, but growth in the number of these signs has remained largely flat since 2008. Flag pole installations experienced a dramatic drop in 2009 which, at the time, was reported to be linked to a drop in 3-line/multi line displays, as flags/poles are where these displays "tend to be found". Flag installations have experienced a further drop this year. It is not clear whether this is linked to numbers of 3-line/multi line reported in this year's survey which experienced a slight rise, since 552 of the reported physical displays were unaccounted for in the display location data. The number of screens in transport hubs has continued to increase this year, accounting for 9% of total display locations.

3.5.5   Figure 3.7 overleaf shows the distribution of display locations in GB between 2005 and 2010.
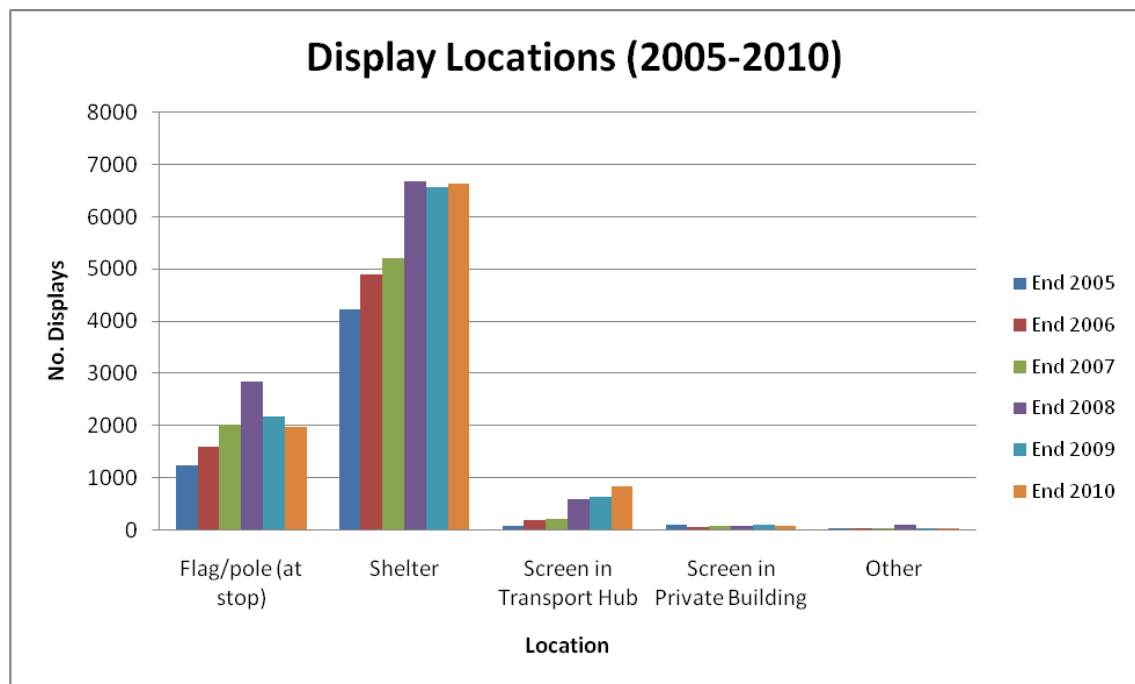
Figure 3.7: Sign locations in GB between 2005 and 2010

3.5.6   Table 3.8 below shows the number of LAs offering virtual dissemination from 2005-2010:

Methods	End-2005	End-2006	End-2007	End-2008	End-2009	End 2010
SMS	13	14	17	24	36	35
WAP	7	6	6	7	15	15
Local Authority website	14	14	24	20	26	30
Other website (e.g. ACIS)	13	15	20	9	13	15
Transport Direct portal	7	6	15	4	12	14
Phone hotline	3	5	6	6	10	13
Other	3	3	2	2	6	7

Table 3.8: Numbers of LAs offering virtual dissemination from 2005-2010

3.5.7   Overall the number of LAs providing each type of virtual mechanism has grown over the period 2005-2010. However, the growth has been erratic in places, showing a dramatic dip in 2008 across a number of channels. The number of LAs offering most mechanisms has at least doubled since 2005.

4 Equipment Performance

4.1 Introduction

4.1.1 For the fourth year, we are looking at how well systems perform once in place and how this compares with the design lifetime.

4.2 Lifetime of Equipment

4.2.1 We asked LAs to tell us how long equipment was designed to last and how long it did actually last. Four different equipment types were included: Stop signs, AVL units, in-bus displays and servers. In all cases there was a discrepancy between the design lifetime of the equipment and the actual lifetime of the equipment.

4.2.2 Table 4.1 below shows the average design lifetime for each type of equipment as well as the average reported actual lifetime:

Equipment type	Average Design Lifetime (years)	Average Actual Lifetime (years)	Discrepancy between Design and Actual (yrs)
Stop signs	10.1	11.1	1.0
AVL Unit	9.5	9.7	-0.2
In Bus Display	9.3	9.1	0.2
Server	7.9	7.9	-0

Table 4.1: Average Design and Actual Lifetime of Equipment 2010

4.2.3 Compared with 2009, the discrepancy between design lifetime and actual lifetime has narrowed in most cases to a negligible difference.

4.2.4 Last year, the greatest discrepancy between design lifetime and actual lifetime is in in-bus display units which were designed to last on average 10.5 years but actually last 6.1 years. This year the difference between design lifetime and actual lifetime is only 0.2 years.

4.3 Replacement

4.3.1 We also asked LAs to tell us what the primary reasons for replacement were for At-stop signs, In-bus displays and vehicle location systems. Five possible options were given: faulty equipment, end of life, obsolescence/superseded, vandalism and other.

4.3.2 The responses this year were very similar to the responses in 2008 and 2009.

4.3.3 The reasons for replacement varied according to equipment type. All equipment types were most often replaced because of faulty equipment. However, a significant number of authorities cited obsolescence was a significant reason for replacing vehicle location systems, while vandalism was a significant reason for replacing at stop signs. The rising number of authorities citing obsolescence as a reason for replacement should be expected as these systems begin to age. Table 4.2 below summarises the picture for 2008, 2009 and 2010:

Reasons for Replacement	At Stop Displays			In Bus Displays			Vehicle Location Systems		
	2008	2009	2010	2008	2009	20101	2008	2009	2010
Faulty	17	21	16	10	9	14	19	20	21
End of Life	7	3	7	3	3	5	8	7	2
Obsolete	6	8	5	4	3	6	12	10	14
Vandalism	13	14	15	2	1	0	8	3	0
Other	7	7	7	0	1	7	0	3	3

Table 4.2: Replacement of RTI Equipment 2008-2010

4.4 Discontinuation

4.4.1 Finally in this section we asked LAs why they had discontinued the provision of any equipment if they had done so. There were four possible reasons: cost of operation, failure to perform, after installation support and other. Although only a small percentage responded to this question, more LAs indicated that they had discontinued equipment than last year.

4.4.2 All types of equipment saw a rise, but particularly at stop signs which were discontinued for 3 main reasons: cost of operation, failure to perform and other. The cost of operation comes as less of a surprise given than all LAs are looking to cut costs. Failure to perform is more surprising and saw a rise across all types of equipment. Interestingly, after installation support was largely unchanged across all types of equipment.

4.4.3 Although "other" makes up a sizeable reason given for discontinuing equipment there is little consistency in what other means. Over half of those LAs who chose other (6), only did so to say that they hadn't discontinued anything yet. A sample of other comments given for discontinuation are:

– after installation support. This should have been covered by the choices given above and so was moved to the correct place;
– unsuccessful implementation of a trial for in-bus displays;
– bus company pushing for a different, but unaffordable technology;
– the buses aren't operating a real time system.

4.4.4 Table 4.3 below summarises the number of LAs who discontinued the provision of RTI both in 2009 and 2010:

	At Stop Bus		In Bus Displays		Vehicle Location Systems	
	2009	2010	2009	2010	2009	2010
Cost of Operation	2	9	0	4	0	4
Failure to Perform	3	8	1	4	2	3
After Installation Support	1	2	0	2	0	2
Other	0	7	1	8	1	10

Table 4.3: Number of LAs citing reasons for discontinuing equipment 2008

5 Traveller Services

5.1 Smart and Integrated Ticketing

5.1.1 Last year we asked respondents to indicate whether they had plans to purchase or assist in the purchase of smartcard enabled ticket machines. Of the 80 English Authorities, 22 or about 25% had significant plans to purchase or assist in the purchase of smartcard enabled ticket. (In Wales and Scotland, the devolved governments were committed to ensuring that buses are fitted with smartcard enabled ticket machines.)

5.1.2 This year we have asked all LAs to indicate whether they would have their own ITSO scheme operating license in 2010, 2011 or 2012. Only 14 LAs indicated that this would be in place in 2010, but by 2011 this had risen to 26. There is no further rise predicted for 2012. Although a number of those who indicated that they would have their own ITSO scheme operating license were the larger PTEs, this by no means accounted for all of those that indicated this.

5.1.3 We also asked how many buses would be fitted with smartcard enabled ticket machines in 2010, 2011 and 2012. 26 LAs in 2010 have 14,465 buses fitted with smartcard enabled ticket machines. In 2011 this rises to 38 LAs with 18,968 buses fitted with smartcard enabled ticket machines. In 2012 the same LAs are projected to have 22,495 buses fitted. If these predictions are borne out, this would mean that about 50% of the bus fleet would be fitted by 2012. London's 8,200 buses currently accounts for a substantial proportion (57%) of the total number of fitted buses. However, this reduces as other schemes are introduced in subsequent years to 43% in 2011 and 36% in 2012.

5.1.4 Figure 5.1 shows graphically current and projected smartcard-enabled bus numbers.

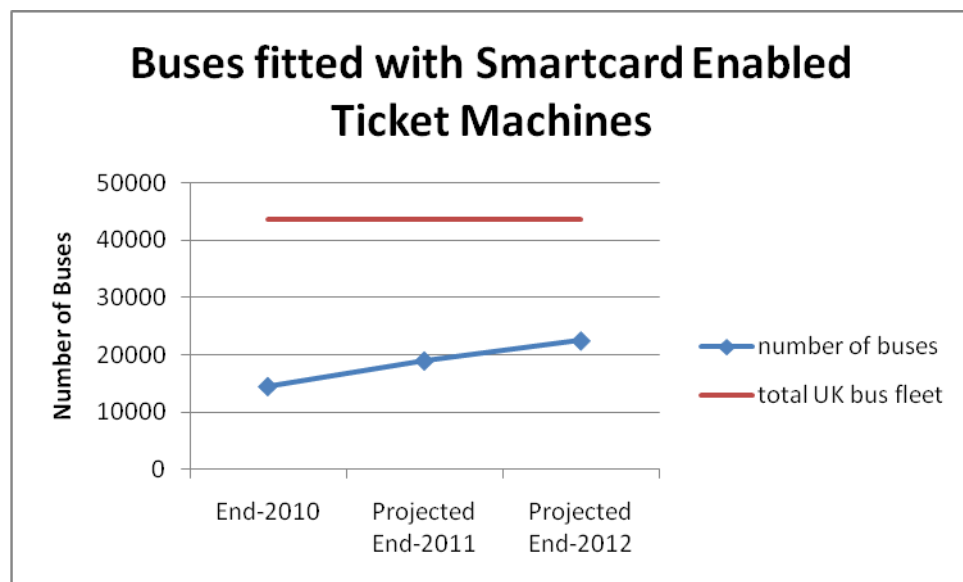

Figure 5.1: Number of buses fitted with smartcard enabled ticket machines2010-2012

5.1.5 Respondents were also asked what ticket protocol they would be using. They were given 4 options:

– ITSO;
– EMV;
– mobile phone;
– other.

5.1.6 Overwhelmingly, LAs indicated that they would be using the ITSO ticket protocol. Of the 47 LAs who responded, 46 or 98% indicated that they would use ITSO. 2 or 4% indicated that they would use EMV and 7 or 15% indicated that they would use mobile phones. All of those that indicated that they would use EMV or mobile phones were also using ITSO. Two shire authorities indicated that they were using an "other" protocol, but they did not indicate which one.

5.1.7 Finally, LAs were asked whether the ticketing schemes within their area were: smart multi-modal, smart multi-operator, non smart multi-modal, non smart multi-operator. Respondents were asked to tick all that apply. There were 48 respondents to the question. There were 35 respondents that had some kind of Smart scheme and 16 Respondent with some kind of non-smart scheme. There was some overlap between the two.

5.1.8 Of those that were smart, most of these (14) were multi-operator, while only 7 were multi-modal. Most of those that were multi-modal were also multi-operator. Of those that were not smart, they were pretty evenly divided between multi-modal (29) and multi-operator (33). Again, there was substantial overlap between the two.

5.2 Audio/visual provision

Audio Announcements at Stop

5.2.1 Information now exists for a number of years for at-stop Audio/Visual provision. We asked Local Authorities to indicate not only whether RTI was available via at stop audio announcements, but also by what means the announcements were made. Authorities were given 4 choices:

- Automatic at stop speakers;
- Triggered at stop speakers;
- Stop mounted phones;
- Passenger phone hotlines.

5.2.2 Last year the introduction of phone hotlines increased the availability of audio information via phone hotlines from 1 to 22,571 stops. This year there has been a sharp fall to 16,270 stops, a fall of 28%. However, last year there were 4 respondents whereas this year we have only 2; this drop in respondents accounts entirely for the drop in stop numbers.

5.2.3 At-stop speakers continue to see a rise. Last year announcements were available from at stop speakers at 2456 stops. This year this has risen to 2848 stops, a rise of 16%. Although there were more respondents this year, this accounts for very little of the increase. In fact almost all of the increase is accounted for by an increase in stops equipped in one LA. As last year, most announcements via at stop speakers are made via triggered at stop speakers. Almost 100% of announcements are delivered this way.

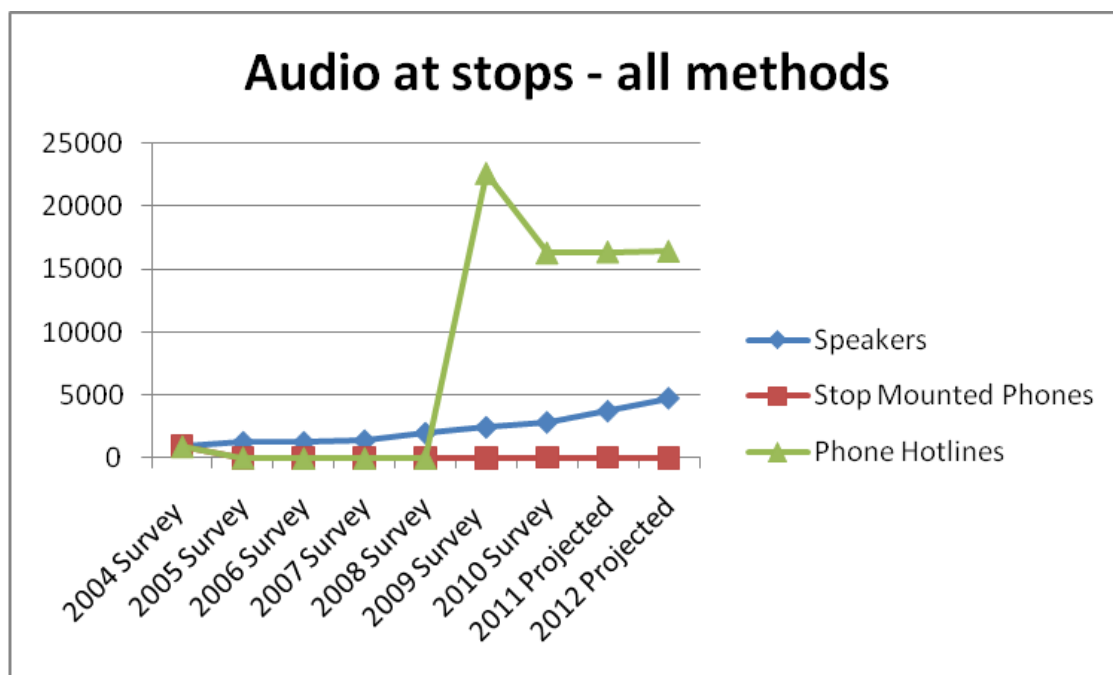5.2.4 Figure 5.2 below shows the changes in audio provision at stop from 2004 to 2010.

Figure 5.2: Audio provision at stops 2004-2010

Audio/Visual on Buses

5.2.5   Table 5.1 shows the change in AV facilities provided on buses. Almost all of the equipped buses are accounted for by London's rollout of facilities on its fleet of 8200 vehicles, under the iBus project.

Equipment type	Number of buses equipped 2009	Number of buses equipped 2010	Percentage of UK fleet with this equipment 2010	Change since last year (in buses)
Passenger Displays	10,117	9,689	22%	-428
Automated audio announcements	8,332	8,295	19%	-37
Next stop (visual)	10,271	9,790	22%	-481
Next stop (audio)	8,341	8,311	19%	-30
Real Time Graphical Displays	20	4	<1%	-16
Final destination (visual)	8,804	8,305	19%	-499
Final destination (audio)	8,268	8,209	19%	-59
Points of Interest (visual)	N/A	59	<1%	N/A
Points of Interest (audio)	N/A	14	<1%	N/A

Table 5.1: UK Bus fits (at end-10)

5.2.6   The data shows a slight decrease across the board for those technologies for which we have data for (at least) the last two years. This year between 60 and 66 LAs answered the questions pertaining to audio and visual equipment on buses, depending on the technology. This number went up in each case for 2011, probably accounting for the rise in all equipment for 2011.

5.2.7   Although the questions were answered by between 55% and 62% of survey respondents, very few of these actually have systems. Most of them entered zeros. Therefore, where these technologies do exist, they are concentrated in a very few Local Authorities. For instance, the 20 Real Time Graphical displays in 2010 are only found in one LA; this technology remains very rare.

5.2.8   The graph below shows the growth in each type of Audio/Visual technology since 2005. There has been growth in next stop information (both audio and visual) and in destination information (both audio and visual) since 2005. There was a significant jump in final destination information between 2006 and 2007 and a jump in next stop information between 2007 and 2008. However, most of this growth is accounted for by London's iBus system. Further, the growth shown in the graph below is in the context of the total number of buses (44,923). Again, there is relatively little A/V installed and what does exist is concentrated in a few LAs.
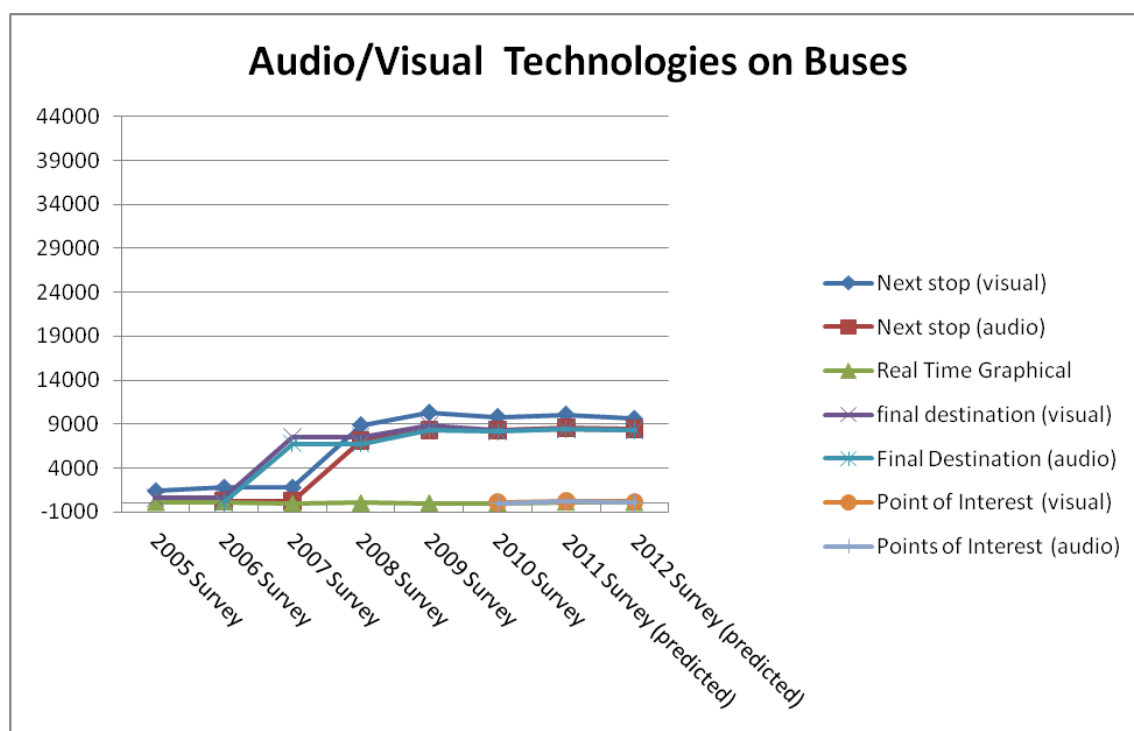

Figure 5.3: Audio/Visual Technologies on Buses in terms of the UK bus fleet.

5.2.9   This year we extended this section and asked respondents who had paid for the system. The options were: the LA, the Bus Operator, a 3rd party (eg developer) and other. Respondents were permitted to choose as many as applied to capture where the costs had been shared. The responses are slightly mystifying; more systems appear to have been paid for than currently exist or are planned to exist. There were 42 respondents. 39 LAs paid for A/V systems either alone or in combination with the Bus Operator or 3rd Party. In 2 small-scale cases, Bus Operators were reported as solely responsible for meeting the cost of A/V. By far the most common response was shared cost between the LA and Bus Operator: 25 LAs shared the cost with Operators while a further 9 also shared the cost with a 3rd party.

5.2.10   We also asked LAs what the primary justifications for implementing A/V were. Respondents were given 8 choices and were permitted to choose all that apply:

- Modal shift;
- Equality of access;
- Equality of opportunity;
- Safety and security;
- Reduction of carbon emissions;
- Increased patronage;
- Other.

5.2.11   49 LAs responded to this question. The three key justifications which LAs selected were Increased Patronage (40 respondents), Modal Shift (37 respondents) and Equality of Access (29 respondents). 24 or 50% of respondents listed all three of these justifications.

5.2.12   Equality of opportunity (14 respondents), security and safety (12 respondents) and reduction of carbon emissions (16 respondents) all had similar numbers of respondents.

5.2.13   4 LAs selected all 6 justifications.

5.2.14   Finally, LAs were asked to indicate whether their AV implementation was part of a wider technology implementation. The majority of answers were "no". Of the 47 respondents only 12 indicated that their AV was part of a wider implementation, while 35 indicated that it was not. For those that had implemented as part of a wider technology implementation, we asked them to tell us which other technologies were implemented at the same time. A selection of the answers is:

- as part of a traffic management/traffic light priority implementation;
- as part of a smartcard implementation;
- at the same time as AVL/radio.

6 Rail Alignment

6.1 Introduction

6.1.1 This year for the first time, we asked respondents about their relationships with train companies in their area. Of the 108 respondents, 68 responded that there was at least one train company in their area.

6.2 Train Companies

6.2.1 Most LAs that responded have more than one Train Company operating within their area and many have over 2. The bar graph below shows the number of local authorities with each number of train company in their area:
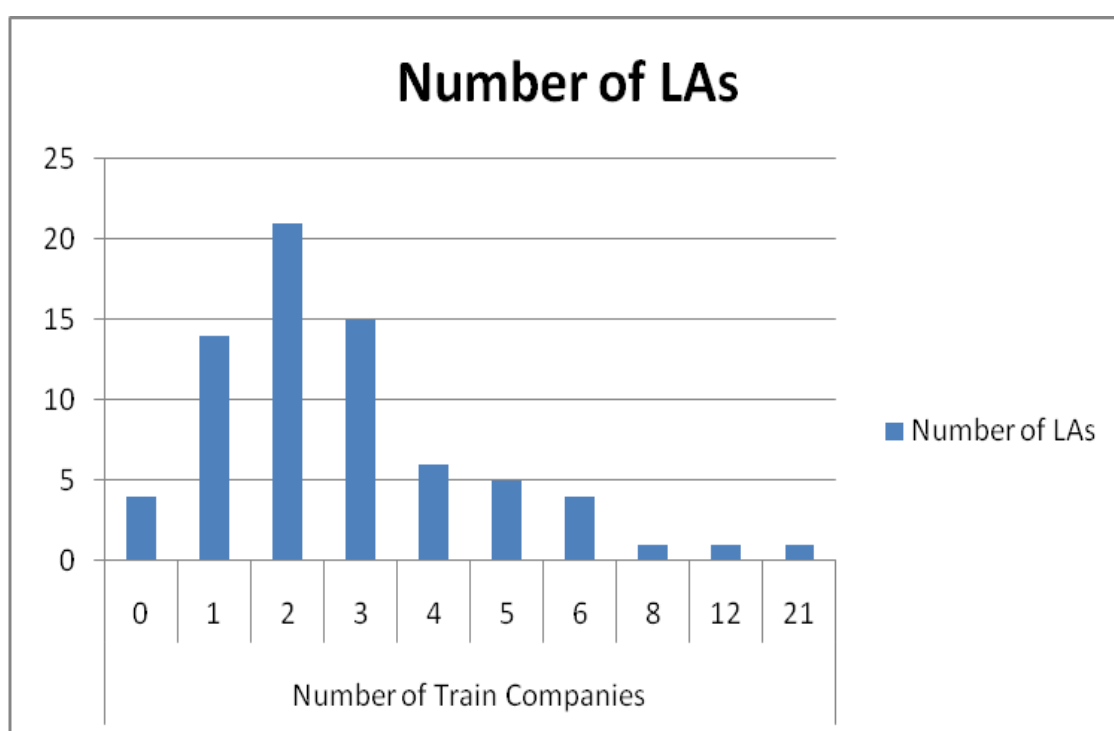
Figure 6.1:

6.2.2 Regionally there is a lot of variation too. London has the most train companies at 21 and no other region really approaches this. However, the East of England has 14, the Southeast has 11 and the West Midlands 10. Scotland is dominated by Scotraill, though SESTRAN reports 4 other train companies.

6.3 Train Data

6.3.1 Although 68 LAs reported that there was at least one train company operating in their area, only 24 LAs were using train schedule data for journey planning (via SMS and web), displays at bus/rail interchanges or other (unspecified) purposes. By far the most common use of train schedule data was for journey planning via web; 20 LAs used train schedule data for this purpose. However, only 1 LA used train schedule data for journey planning via SMS. 12 LAs report that they use train schedule data at bus/rail interchanges.

6.3.2   A similar picture emerges for train real time data. 20 LAs indicate that they are using train real time for journey planning (via SMS and web), displays at bus/rail interchanges or other (unspecified) purposes. However, the majority (13) of those that make use of train real time data, use it for bus/rail interchanges. 8 LAs use it for journey planning via web, but only 2 use it for SMS. It is clear that LAs are not using either schedule data or real time data for SMS.

6.3.3   23 LAs felt that train data came to them in a usable form, but 15 felt that it did not. However, 2 of those who indicated that the data did not come in a usable form, also indicated under the comments that they did not actually use the data.

6.3.4   Finally, we asked LAs whether they collaborated with local or regional train companies to provide real time information on train services or schedules. Overwhelmingly the response was that LAs did not collaborate with train companies. 42 of the 50 respondents to this question did not collaborate. Two of these indicated that they were working toward collaborating in the future.

7 Expenditure on RTI

7.1 Introduction

7.1.1 In this year's survey, we have continued to pursue the questions added last year to reflect the changing position of RTI on buses. As last year, we have asked LAs about their planned expenditure on repair and replacement. We will now, therefore, be able to compare responses last year with the responses this year.

7.1.2 Of those local authorities who responded, approximately 54% had RTI systems. However, as in previous years, not all respondents with RTI systems completed the Expenditure section of the survey and this number decreases for each year in the future. So, for 2010 63% of those respondents with RTI systems completed the Expenditure section. This is considerably lower than the 86% response which we had last year. This seems to be the result, at least in part, of a genuine uncertainty about what will be available over the next three years as a result of budget cuts. There is also a feeling that some of these decisions may be contentious and are commercially sensitive.

7.1.3 The response rate for future projections were 63% for 2011 and 56% for 2012. There is, therefore, a decreasing reliability in the figures in future years.

7.2 Actual Expenditure on RTI 2004-2010

7.2.1 In 2010, actual expenditure on RTI in UK was £18.0M down significantly (33%) on the £26.7M of 2009. Once again this is by far the lowest level for which we have data and down £22M on 2009 predictions for 2010. Table 7.1 shows expenditure by year.

	England and Wales, £M	Scotland, £M
2004	44.1	N/A
2005	52.8	7.0
2006	36.2	5.1
2007	57.1	5.9
2008	50.1	1.0
2009	24.9	1.8
2010	17.0	0.9

Table 7.1: Expenditure on RTI by year

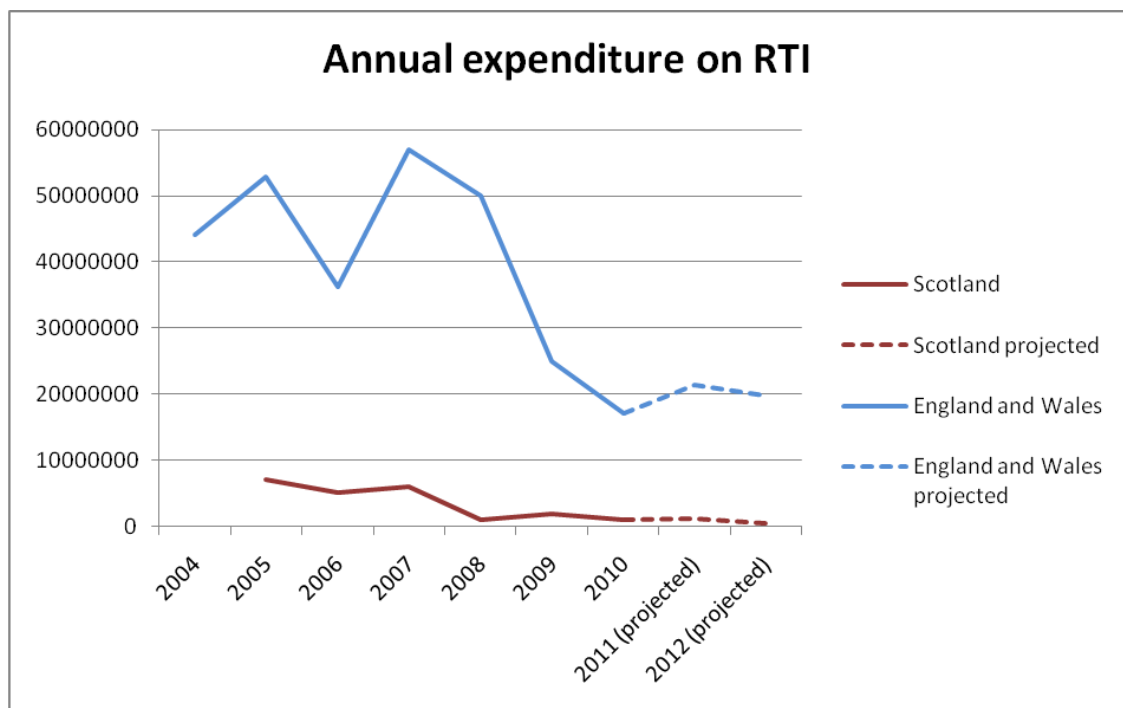7.2.2 This volatility in expenditure is seen graphically in Figure 7.1 overleaf.

Figure 7.1: Expenditure on RTI 2004-2012

7.3   Predicted Expenditure over the next three years

7.3.1   Total expenditure for the years 2010-2012 is expected to be in the region of £61M, down on 2009 predictions of £80.4M and 2008 predictions of £122M for the following 3 years. Total expenditure for Scotland in the period 2010-2012 is expected to be in the region of £2.5M, for Wales £0.5M and for England and NI will be in the region of £28.5M.

7.3.2   UK predictions for 2011 and 2012 remain cautious at £22.6M and £20.4M respectively, but nevertheless up slightly on this year. This represents a rise of 25% between 2010 and 2011 and a fall of 10% between 2011 and 2012. However, these falls are entirely in keeping with the falls predicted in previous years for the two years following the current year. Although in the past, actual expenditure exceeds predicted expenditure, that trend seems to have been reversed in 2009 and 2010. Both years saw actual expenditure recorded as lower than predicted: in 2009 by 32% and in 2010 by 24%.

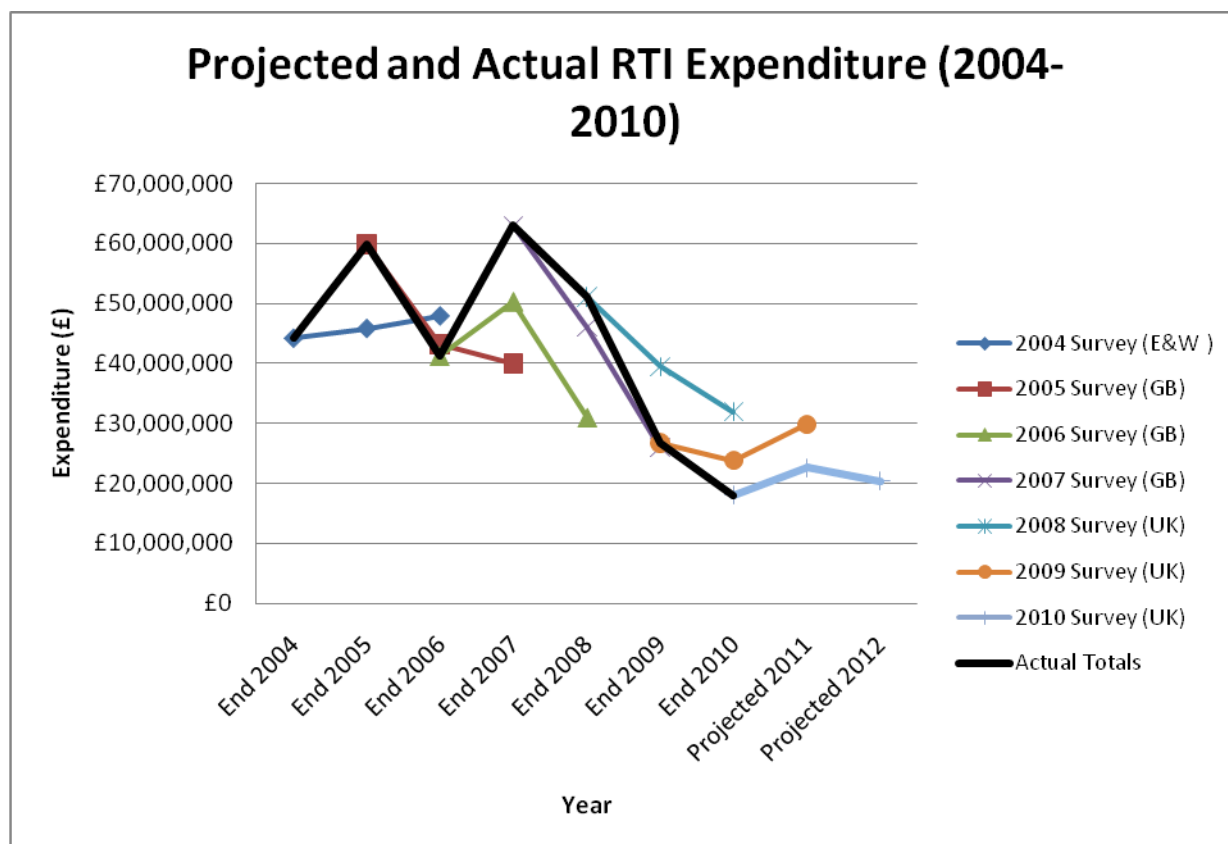7.3.3   Figure 7.2 below shows the actual and projected expenditure as captured by the surveys for 2004-2012:

Figure 7.2: Actual and Predicted Expenditure 2004-2012

7.3.4   The graph shows the dramatic fall in expenditure since 2007. 2011 and 2012 look fairly flat and do not begin to approach pre 2009 levels.

7.3.5   England and Scotland both expect to see a rise between 2010 and 2011; while Wales expects to see a fall:

– England projects that expenditure will rise from £16.6M to £21.3M in 2011 and fall back slightly to £19.8M in 2012. This represents a rise of 28% between 2010 and 2011 but a fall of 7% between 2011 and 2012.

– In Wales, expenditure is projected to drop from £0.3M in 2010 to £0.06M in 2011 and staying stable in 2012. This represents a 35% fall between 2009 and 2010 and a 7% rise between 1011 and 1012.

– Scotland by contrast expects to see a rise in expenditure from 2010 to 2011. Expenditure is expected to be in the region of £1.1M in 2011 but falling back to £0.5M in 2012. This represents a rise of 21% between 2010 and 2011 but a fall of 57% between 2011 and 2012.

7.4   Regional spend in England and Wales

7.4.1   There is wide variation in levels of expenditure across the regions. Although GO regions were formally abolished in the Comprehensive Spending Review in Oct 2010, for consistency we have continued to use them for our regional analyses.

7.4.2 Total regional expenditure for 2010-2012 varies widely across regions. Table 7.1 below shows the actual expenditure in 2009 and 2010 and the predicted expenditure for 2011 and 2012 by GO Region. The table has been ordered from highest to lowest expenditure in 2010.

	Actual Expenditure		Predicted Expenditure	
Region	**2009**	**2010**	**2011**	**2012**
London	12,800,000	9,765,000	11,200,000	12,000,000
South East England	2,655,000	1,950,035	1,195,045	1,060,000
Yorkshire & the Humber	1,466,615	1,762,000	1,467,000	1,550,000
East of England	3,200,000	1,442,000	1,707,000	905,000
South West England	466,800	£692,000	2,762,000	792,000
North West England	382,000	434,000	2,514,000	3,010,000
East Midlands	1,300,000	400,000	250,000	250,000
Wales	108,000	366,904	59,200	63,200
North East England	450,000	200,000	200,000	210,000
West Midlands	2,059,000	0	0	0
Totals (£)	**24,887,415**	**£17,011,939.00**	**21,354,245**	**19,840,200**

Table 7.1: Actual and Predicted expenditure by Region from 2009-2012

7.4.3 London historically has had the highest spending of all regions, and this continues this year. Figure 7.3 below is a graphic illustration of the proportion of expenditure attributable to London from 2005 to 2012.
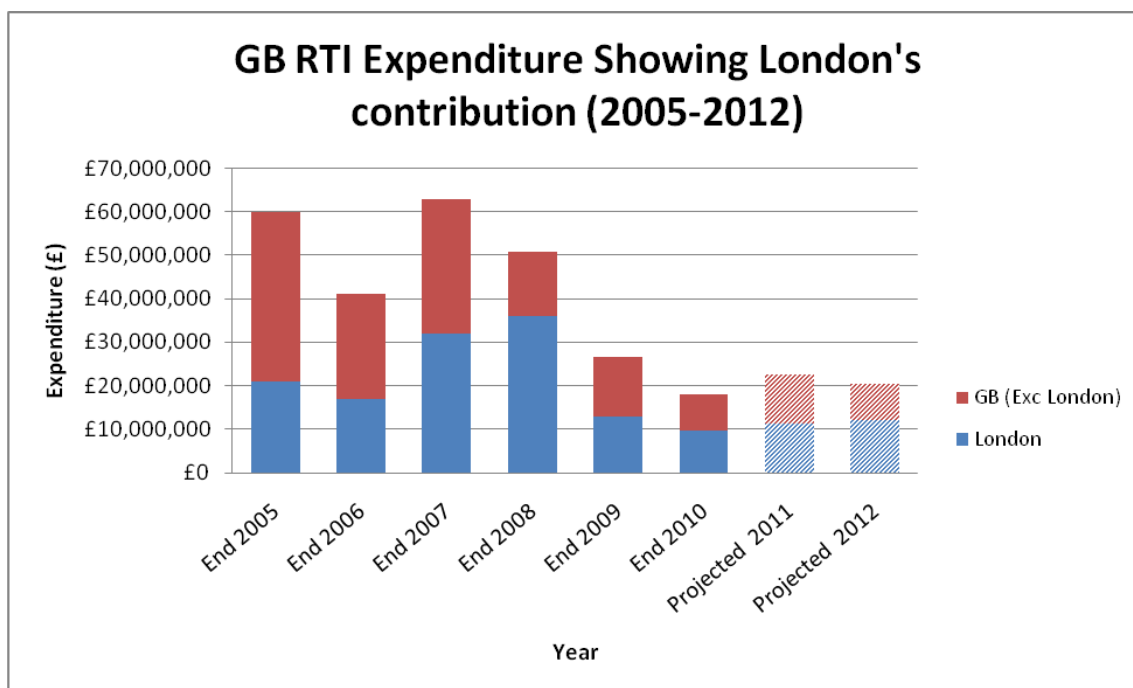
Figure 7.3: Expenditure in the GB showing London's contribution

7.4.4   London's 2010 expenditure was £9.8M, down £3M (24%) from £12.8M in 2009. However, 2011 and 2012 are expected to return to near 2009 levels at £11.2M and £12M respectively. London's expenditure accounted for 54% of total expenditure in 2010.

7.4.5   Outside London, the Southeast, Yorkshire and the Humber and the East of England are the highest spending regions. Of these only Yorkshire and the Humber show a rise since last year; the Southeast and the East of England have both fallen since last year.

7.4.6   The Southwest is the only region which spent between £0.5m and £1M. This is slightly up on last year's expenditure of £0.5M but is well below predictions last year for 2010 of £2.4M. All other regions spent between £0 and £0.5M.

7.4.7   Figure 7.4 overleaf shows the regional expenditure from 2004 to 2012.

7.5   Regional spend in Scotland

7.5.1   Regional expenditure for Scotland is shown in Figure 7.5 below. As in 2008 and 2009, no region showed expenditure above £0.5M. Most regions show a decline since last year. SWESTRANS and SEStran are the only two to remain stable since last year at £180K and £400K. All other regions show a fall.

7.5.2   Figure 7.6 shows the breakdown of Scottish expenditure by region from 2005-2010.

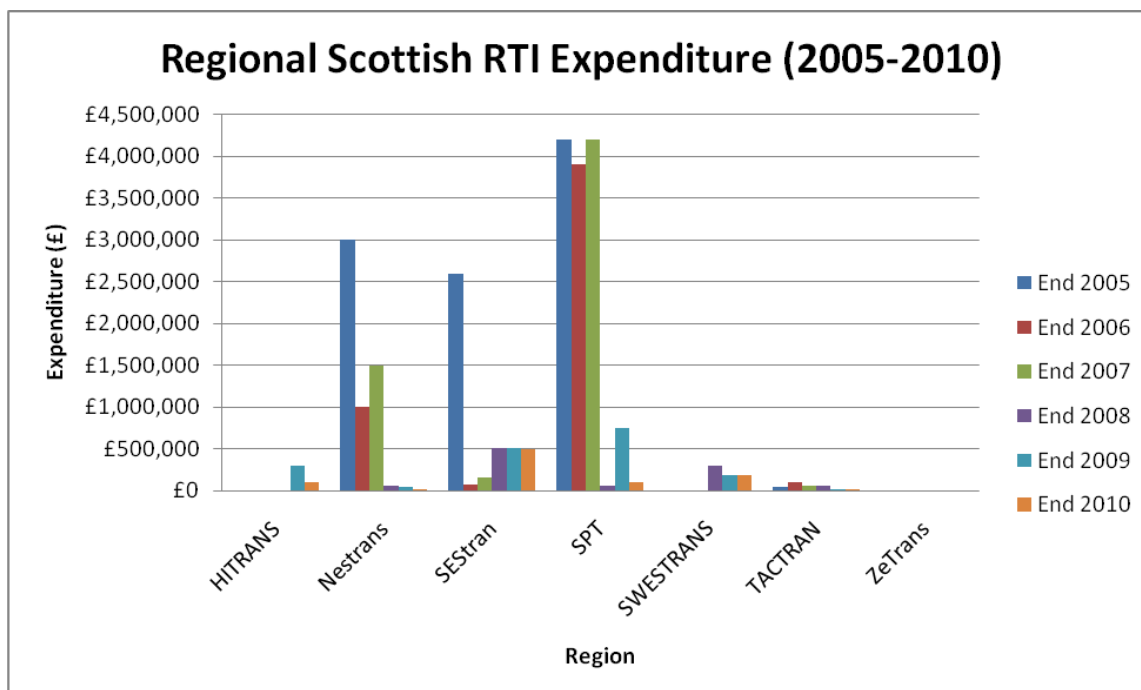*Figure 7.6: Annual Regional Spend in Scotland 2005-2010*

7.5.3   SPT spent £755K in 2009, but this has fallen back to £100K in 2010. This will remain stable in 2011 but they expect no expenditure in 2012.

7.5.4   HITRANS which in 2009 spent £304K, this year has spent £100K. This is expected to fall further in 2011 and 2012 to £15K.
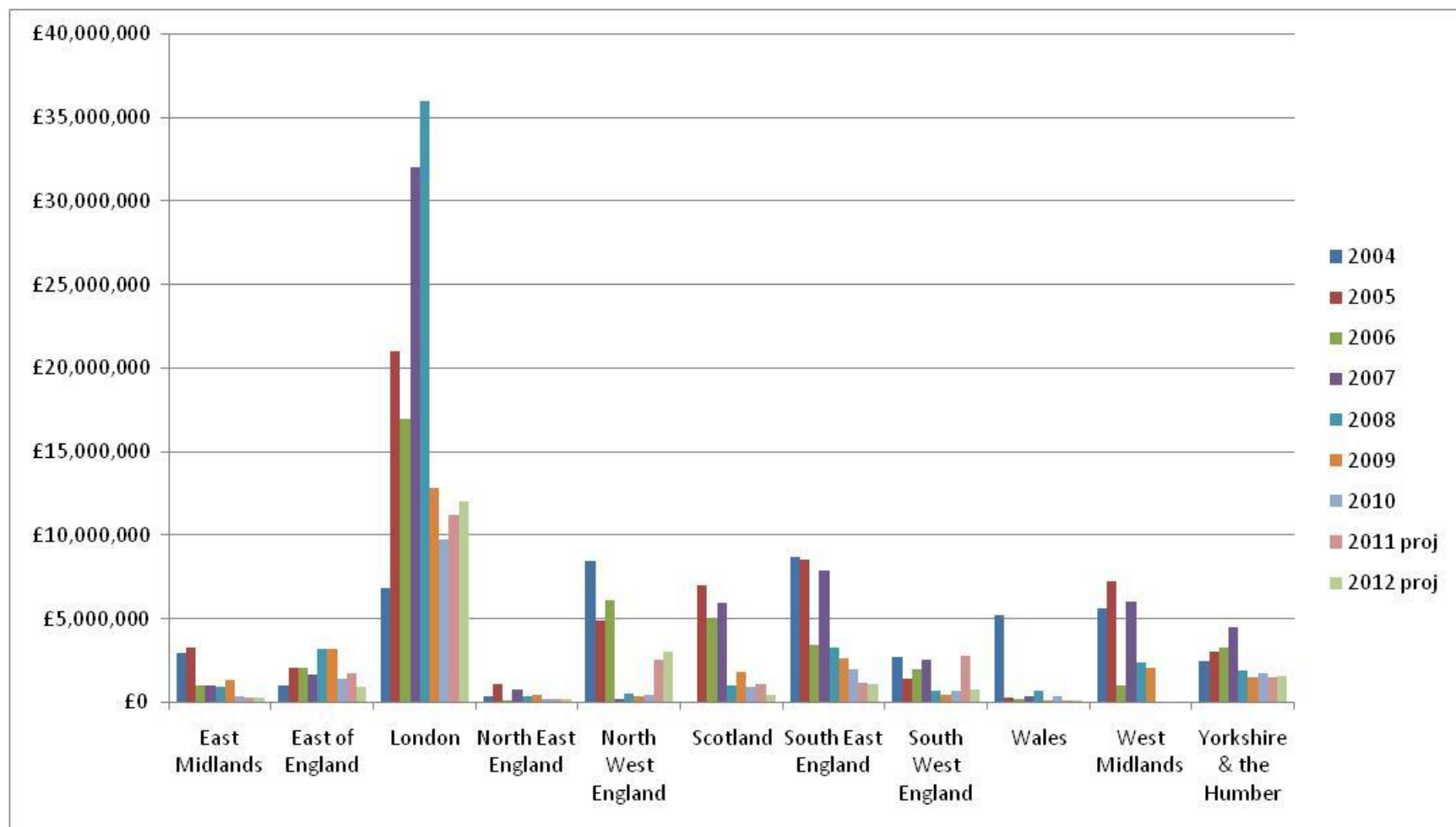
Figure 7.4: Expenditure on RTI from 2004 to 2012, by region

7.5.5   Nestrans has seen steady falls over the last 3 years: in 2008 expenditure fell to £60K, and fell further in 2009 to £43K. In 2010 expenditure has halved to £22K. However, projections show a sharp increase in 2011 to £400K but a fall back to £50K in 2012.

7.5.6   TACTRAN's expenditure was £12K in 2009, but has dropped slightly to £10K in 2010. Falls will continue in 2011 to £5K and are expected to remain at that level in 2012.

7.5.7   ZeTrans, as in previous years, indicated no expenditure.

7.6   Repair, Replacement and Investment

7.6.1   As last year, we asked Local Authorities to break down their expenditure for the current year. They were asked how much of the total expenditure for the year was replacement costs and how much was repair costs. We assumed that once replacement and repair had been removed, the balance of the expenditure was new investment.

7.6.2   Table 7.2 below shows the distribution of costs between repair, replacement and investment. The table has been ordered by highest total expenditure to lowest total expenditure:

Region	Repair	Replacement	New Investment	Total
London	No data	No data	No data	9,765,000
East of England	235,000	155,000	1,052,000	1,442,000
South East England	572,000	140,000	1,238,035	1,950,035
West Midlands	0	0	0	0
East Midlands	0	0	400,000	400,000
Yorkshire & the Humber	575,000	25,000	1,162,000	1,762,000
SPT	0	5,000	95,000	100,000
SEStran	50,000	20,000	430,000	500,000
North East England	5,000	0	195,000	200,000
North West England	232,000	0	202,000	434,000
South West England	250,000	10,000	432,000	692,000
HITRANS	0	0	100,000	100,000
SWESTRANS	0	0	180,000	180,000
Wales	105,000	30,000	231,904	366,904
Nestrans	0	0	21,750	21,750
TACTRAN	5,000	0	5,000	10,000
ZeTrans	0	0	0	0
Totals (£)	**2,029,000**	**385,000**	**5,744,689**	**17,923,689**

Table 7.2: Regional Breakdown of Expenditure

New Investment

7.6.3   By far the greatest of expenditure – £5.7M of the £8.4M total – remains attributable to new investment. All regions except ZeTrans showed some level of new investment. In most other regions this was between 50% and 100% of total expenditure in 2010. Only the Nortwest of England doesn't quite make it into this bracket at 47% of their total expenditure on RTI being on new investment. London did not complete the Repair and Replacement sections of the survey and we therefore cannot extrapolate New Investment for the region.

Replacement

7.6.4   Last year, the UK spent £385k on replacement. This compares with £1.5M in 2009. This is 4% of total expenditure compared with 6% in 2009.

7.6.5   Most regions showed minimal expenditure on replacement, representing between £0 and £50k. A few regions indicated that replacement was between £100,000 and £200,000.

Repair

7.6.6   Overall in 2010, £2.1M was spent on repair in the UK. This compares with £4.2M in 2009. The highest repair costs were experienced by:

  – Southeast England (£572,000);
  – Yorkshire and the Humber (£575,000).

7.6.7   Four regions spent between £100,000 and £500,000; three regions spent between £0 and £100,000 on repair; and some regions reported no repair costs.

7.7   Expenditure on Bus-related Technology

7.7.1   This year we have once again asked respondents how much they have spent on Bus Related Technology. There seems to have been some confusion among respondents whether the amount should include the RTI figures or not. It is not possible to untangle this and when the question is asked in next year's survey we shall make it clearer. Therefore, the figures are not completely reliable and should be treated with caution.

7.2   However, in 2009 expenditure on bus related technology was reported as £13.3M. In 2010, this was reported as £13.2. We also asked for the following 2 years and the responses showed a great deal of variability. In 2011, expenditure on bus related technology was expected to be £18.9M and in 2012 in was expected to be £7.9M.

7.7.1   We asked a new question this year regarding expenditure on Smart card and integrated ticketing. Scottish LAs did not respond as their ticket machine implementation is covered by Transport Scotland.

7.7.2   In England and Wales in 2010 expenditure on smart card and integrated ticketing was £5.7M. This total was dominated by 3 Regions: Northwest of England (£2.4M), the Southwest of England (£1.1M) and Yorkshire and the Humber (£1.1M).

7.7.3   Expenditure on smart and integrated ticketing is expected to rise significantly in 2011 to £9.4M and then to drop back in 2012 to £5.5M. However far more LAs supplied figures for 2011 than 2010 or 2012. Only 13 LAs responded for 2010, but 21 LAs responded for 2011.

7.7.4   In February 2010, the DfT invited six PTEs and a further three Local Authorities to present 'Spending Plans' for £2.2 million of funding (£1.1 million in each of 2009/10 and 2010/11) to support the development of smartcards in their areas. That funding was awarded to: Tyne and Wear, GMPTE, South Yorkshire, West Yorkshire, Merseyside, West Midlands (Centro), Leicester, Nottingham and Bristol.

7.7.5   Not all PTEs/LAs who received government grants responded to the survey this year. However, £4.3M of the smart and integrated ticketing expenditure which was reported came from government grant. This is about 75% of reported expenditure. Only £1.4M of expenditure is provided other than via this DfT funding mechanism.

8 Implementation and Operation

8.1 Introduction

8.1.1 This chapter looks at some of the issues which help or hinder the implementation and operation of public transport technology. In the past we have looked at a variety of issues which have caused concern, with evidence that operational issues are becoming more prominent, due to the increasing numbers of longstanding operational systems.

8.2 The 2010 Survey Results

8.2.1 In this survey, the 2008 scoring system for implementation and operation issues was retained[7]: the degree of issue impact was scored on a scale of 0 ("no difficulty") to 5 ("critical problem"). It was assumed that question respondents not marking an issue had no difficulty with the issue in question and were counted as having scored it as a zero for averaging purposes.

8.2.2 There are twenty-five issues in this year's survey; two new questions were added and are marked with an asterisk. The questions are as follows:

- equipment installations;
- financial considerations;
- coordination with bus operators;
- coordination with suppliers;
- coordination with other LAs;
- coordination with rail service providers;*
- bus fleet movement;
- bus roaming issues;
- DDA compliance;
- communications installations;
- communications costs;
- communications planning permission;
- signage and displays;
- vehicle tracking and on-bus equipment;
- shelter installations;
- suppliers needing to develop functionality;
- availability of advice or guidelines before or during the implementation;
- availability of timetable data;
- availability of National Database data (e.g. NaPTAN, NPTG);
- availability of power supply;
- robustness of equipment;
- maintenance contracts;
- costs of maintenance;
- using the ITSO specification;*
- other (please specify).

8.2.3 The response rate for this year's survey was higher than in 2009, with 65 respondents compared to 55 in 2009.

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[7] In 2008 we changed the way in which we asked this question. In the surveys carried out between 2004 and 2007, respondents were asked to indicate the two issues having the greatest impact on the implementation and operation of their systems. This created problems because some LAs wanted to indicate more than two issues. In order to accommodate this, in 2008 authorities were asked to rate their level of concern they had with each issue on a scale or 0 to 5 (0 = "no difficulty"; 5 = "critical problem") for all issues.

8.2.4   Not all of these 65 respondents provided a score for every issue; the vast majority of issues had between 56 and 58 respondents, with 'other' (5) and "Using the ITSO specification" (41) being the only issue fields with fewer.

8.2.5   Table 8.1 overleaf presents the average degree of impact for each issue, as well as the proportion of respondents marking them as a "4" or "5". It also shows the change since last year.

8.2.6   As shown, the four issues having the highest impact on Local Authorities were largely the same across the 2009 and 2010 surveys. 'Bus fleet movement' has swapped with 'cost of maintenance' in the top four. The four issues which had the highest degree of impact were:

   – Financial considerations (average impact score of 2.58);
   – Availability of power supply (2.57);
   – Bus Fleet Movement (2.23).
   – Cost of Maintenance (2.18);

8.2.7   Although there has been some movement in the ranking of which issues are causing the most concern, the changes in average mark are fairly modest. The issues with the largest average mark change were 'coordination with other Suppliers (-0.77).

8.2.8   However, it worth noting that all issues saw a fall this year. So, although the issues which are causing the most concern, remain the same as last year, the level of concern has gone down

8.2.9   Level of concern was also analysed by looking at the proportion of responses which were a 4 or a 5. These proportions are seen in the two right hand columns of Table 8.1 overleaf while the distribution of respondents choosing each impact level is displayed graphically in Figure 8.1 on the following page. Those issues with the highest levels of concern are those with a high percentage of 4 and 5 responses (e.g. 'availability of power supply' and 'financial considerations').

8.2.10 The issues which had the most 4 and 5 responses were identical to those which had the highest average mark, though 'availability of power supply' replaces 'financial considerations' as the top issue by this measure. These are also the same issues that caused concern last year.

8.2.11 Overall there has been a drop in the number of 4 and 5 responses for all issues, mirroring the decline in the average level of impact. This year, no issue reached 50% of responses rated at "4" or "5".

8.2.12 The decline in the impact of all issues is apparent in both the analyses. There have been some marked drops in the percentage of "4" and "5" responses for some issues. The largest drop was experienced by 'coordination with bus operators' which dropped 24 percentage points between 2009 and 2010. 'Communications costs' was down 18 percentage points and 'financial considerations' was down 16 percentage points.

Issue Description	Average degree of impact	Change from 2009 average degree of impact	Percentage of "4" or "5" responses	Change from 2008 "4"or "5" response percentage
Financial Considerations	2.58	-0.53	31%	-16%
Availability of power supply	2.57	-0.39	42%	-2%
Bus Fleet Movement	2.23	-0.52	28%	-12%
Costs of Maintenance	2.18	-0.67	26%	-14%
Suppliers needing to develop functionality	2.00	-0.53	20%	-9%
Equipment Installations	1.94	-0.61	15%	-14%
Shelter Installations	1.83	-0.30	22%	0%
Coordination with bus Operators	1.82	-0.67	9%	-24%
Communications Installations	1.82	-0.36	15%	-7%
Coordination with Suppliers	1.78	-0.77	15%	-18%
Vehicle tracking and on bus equipment	1.77	-0.59	12%	-4%
Communications Costs	1.72	-0.64	11%	-18%
Signage and displays issues	1.69	-0.60	6%	-10%
Maintenance contracts	1.66	-0.49	11%	-5%
Bus Roaming Issues	1.57	-0.14	14%	-1%
Availability of timetable data	1.51	-0.56	11%	-7%
Robustness of equipment	1.46	-0.36	6%	-3%
Availability of advice or guidelines before or during implementation	1.31	-0.67	6%	-9%
Coordination with other LAs	1.09	-0.62	5%	-8%
Using the ITSO Specification	1.08	N/A	11%	N/A
DDA Compliance	1.06	-0.54	3%	-4%
Coordination with Rail Service Provider	1.05	N/A	14%	N/A
Communications Planning Permission	1.02	-0.29	6%	-1%
Availability of national data (NaPTAN, NPTG)	0.83	-0.35	0%	-7%
Other (Please Specify)	N/A	N/A	N/A	N/A

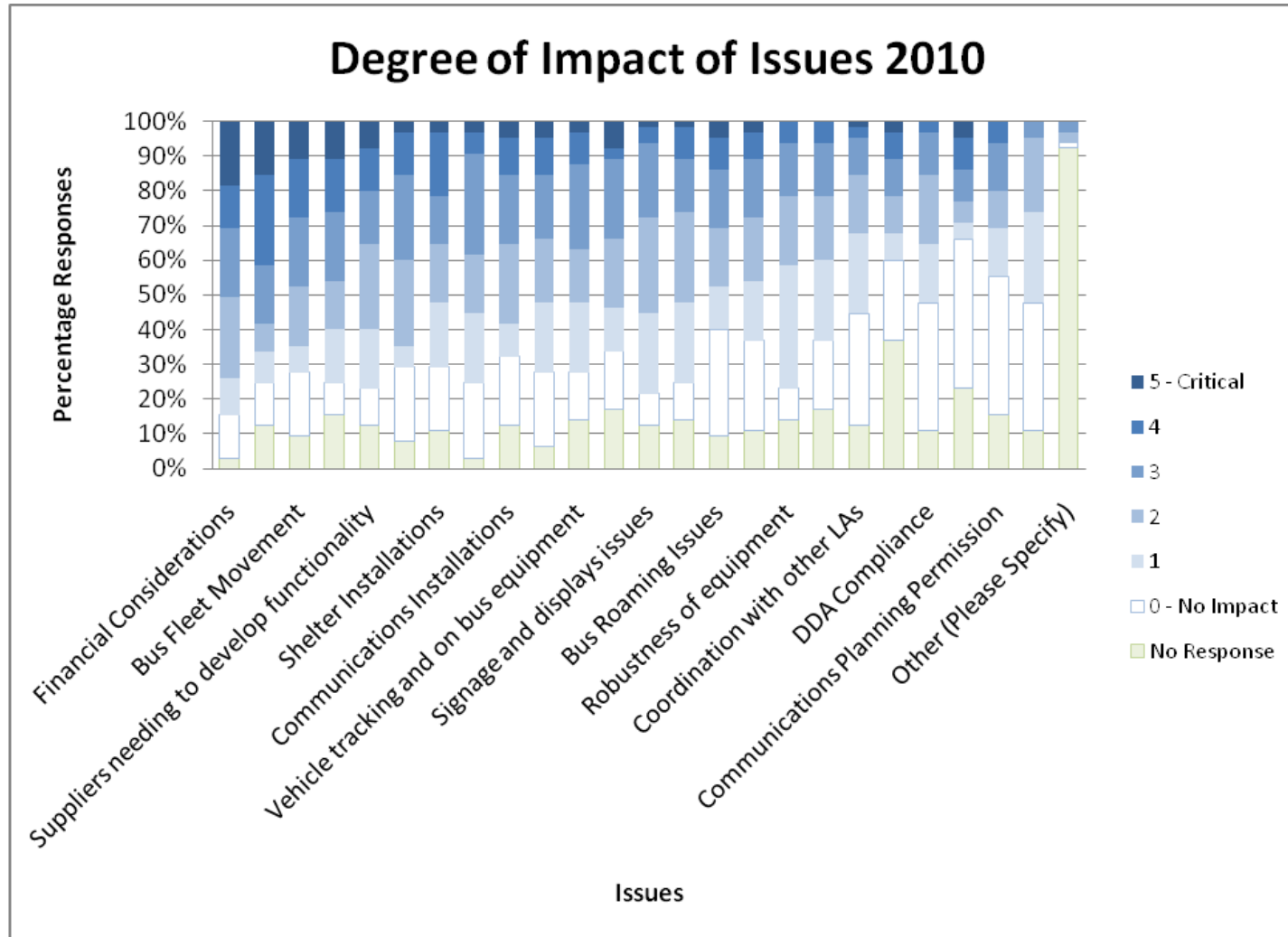*Table 8.1: Degree of Issue impact on RTI implementation and operation, 2010*

Figure 8.1: Degree of Issue impact on RTI implementation and operation, 2010

8.3   Trends 2004-2010

8.3.1   We have now been asking this question since 2004 and although we have changed the way in which we asked it and we have added some new issues through the years, nevertheless, there do appear to be some clear trends. Table 8.2 below shows the top for Issues in each of the years in which we have surveyed LAs:

	2004 Survey	2005 Survey	2006 Survey	2007 Survey	2008 Survey	2009 Survey	2010 Survey
Issue 1	Suppliers Needing to develop functionality	Equipment Installations	Equipment Installations	Financial considerations	Availability of Power Supply	Financial considerations	Financial considerations
Issue 2	Shelter Installations	Suppliers Needing to develop functionality	Coordination with Bus Operators	Equipment Installations	Cost of Maintenance	Availability of Power Supply	Availability of Power Supply
Issue 3	Equipment Installations	Coordination with Bus Operators	Suppliers Needing to develop functionality	Coordination with Bus Operators	Equipment Installations	Cost of Maintenance	Bus Fleet Movement
Issue 4	Financial considerations	Financial considerations	Financial considerations	Coordination with Suppliers	Financial considerations	Bus Fleet Movement	Cost of Maintenance

Table 8.2: Top four Issues in each survey year 2004-2010

8.3.2   Financial considerations have been a concern in every year that we have surveyed this section. However, for the first 3 years, primarily during the installation phase, this was the 4th Issue. The most troublesome issues were the installation issues and getting the functionality that was required. Equipment installations continue to concern respondents, though decreasingly through 2008.

8.3.3   During the middle years 2005-2007 Coordination with Bus Operators appears, reaching a peak of concern in 2006 before dropping down again in 2007 and disappearing altogether in 2008.

8.3.4   2008, 2009 and 2010 see an increase in the concern over those operational issues such as Cost of Maintenance and Bus Fleet Movement. However, it is worth noting that Bus Fleet Movement was added in 2006 and Cost of Maintenance was added in 2008 and so could not have been chosen before then (except by manually entering it under "Other").

8.3.5   Financial Consideration had risen to the top issue in 2009 and this remains the case in 2010, although concern has fallen. It appears that although the recession was technically over, the wide-ranging spending cuts have helped to keep 'financial considerations' in the top place.

8.4   Transport Goals

8.4.1   LAs were asked to indicate on a scale of 0-5 how high a priority they attributed to each in a list of transport goals. The list of goals were:

– Equality of access to transport
– Improving punctuality
– Improving safety and security
– Achieving modal shift

    – Improving the availability of information
    – Improving the quality of information
    – Other

8.4.2   The question was answered by 66 LAs or 61% or respondents. Not all respondents gave a rating for all goals.

8.4.3   The average priority level was high for all goals, reaching nearly 4 in most cases. However, the goal which had the highest average priority level was 'improving the quality of information' at 3.97. 'Improving the availability of information' and 'achieving modal shift' came close behind at 3.94 and 3.92 respectively. 'Improving safety and security' had the lowest average priority level at 3.19

8.4.4   We also looked at how many 4 and 5 responses were indicated for each goal. 50 out of 66 or 76% of respondents indicated a priority level of 4 or 5 for 'Improving the availability of information'. 'Improving punctuality' was in second place with 47 out of 65 respondents or 72% indicating a priority level of 4 or 5.

8.4.5   Table 8.3 below encapsulates the results for this question. The table has been ordered with the highest average priority level on the top.

Goal	Average priority level	Percentage of "4" or "5" responses
Improving the quality of information	**3.97**	**71%**
Improving the availability of information	**3.94**	**76%**
Achieving modal shift	**3.92**	**70%**
Improving punctuality	**3.88**	**71%**
Equality of access to transport	**3.80**	**67%**
Other	**3.80**	**6%**
Improving safety and security	**3.19**	**41%**

Table 8.3: summary of priority attributed to transport goals

8.4.6   Although 'other' has the same average priority level as 'equality of access to transport' this must be treated with caution since the number of respondents was very low (5 respondents), as indicated by the very small proportion of "4" and "5" respondents. When responders were asked to indicate what was intended by 'other', the responses included:

    – improving bus journey times;
    – improving reliability;
    – reducing pollution and congestion.

9 Conclusions

9.1 Equipped buses

9.1.1 The steady rise in equipped buses since 2002 has continued this year after a pause last year. The number of equipped vehicles has risen to 21,414 buses (48% of the total UK bus fleet of 44,923) and 3.3 billion (62%) estimated bus passenger journeys occurred on equipped buses. The increase this year is almost entirely the result of growth among non-metropolitan areas.

9.1.2 Overall there has been a rise of 1,607 equipped buses between 2009 and 2010. Three regions are largely responsible for this rise: East of England, the South East of England and Scotland each with a rise of over 600 buses. There have been much smaller movements, both up and down, in the other regions.

9.1.3 London continues to dominate with all 8,200 buses equipped with tracking equipment. This represents 38% of the total equipped fleet. No other region has 100% of its fleet equipped. Non-metropolitan areas now also represent 38% of the total equipped fleet, with 8,129 buses equipped. Metropolitan areas represent 22% the total equipped fleet with 4,765 equipped buses.

9.1.4 Scotland has also seen a rise in the number of equipped buses from 1,542 to 2,152 (46% of the total Scottish bus fleet), a rise of 610 equipped buses since end-2009. By contrast, Wales seems to have had a slight drop this year from 235 buses equipped in 2009 to 209 buses in 2010.

9.2 Dissemination

Physical signage

9.2.1 Installation of physical displays in the UK continues to look pretty flat. Although there has been a 6% rise in physical displays from 9,682 to 10,292, this followed a 4% fall last year from 10,054 in 2008.

9.2.2 However, broken down into the two types of display – 3 line LED and full screen – there have been some interesting movements. Although 3 line LED displays are more prevalent than full screen displays, accounting for 79% of all physical displays, the rise in full screen displays has continued this year to 21 % of all displays. Further, the growth in signage in England is almost entirely in full screen displays and almost all of the growth in full screen displays is in England. By contrast, most (about 2/3) of the growth in 3 line LED displays was in Wales. It looks as if some of the growth in England in full screen displays is replacing LED displays.

9.2.3 Displays in shelters continue to rise slowly and are now available in 6640 compared with 6560 in 2009. There has been a slight shift away from physical displays on flags/poles while the increase in displays at hubs has continued. However, there are 552 signs (about 5% of the total) which are not accounted for and we do not know where these might be located.

Virtual Mechanisms

9.2.4   Stops covered by virtual dissemination outnumber physical signs, with SMS covering the largest number of stops with over 100,000. LA websites and WAP are the next largest virtual dissemination technologies, all covering between 80,000 and 90,000 stops. Bear in mind that some stops are covered by more than one dissemination mechanism. All methods of virtual dissemination have seen a rise this year with SMS still covering the most stops.

9.2.5   LA website provision is now at just over 87,000 stops covered while WAP is not far behind at 80,475 and looks set to rise further next year, matching LA websites in that year.

9.2.6   Phone Hotlines, Transport Direct Portal and Other Websites show much flatter growth since last year and cover 68111, 64,347 and 58,728 stops respectively.

9.2.7   Increasingly, LAs seem to be providing information through mobile apps. We suggest that this is tracked independently from next year.

9.3   Equipment Performance

9.3.1   The difference between average design lifetime and average actual lifetime has continued to narrow to almost negligible differences. Replacement is primarily the result of faulty equipment or (for at stop displays) of vandalism, though obsolescence has been growing over the last several years. This is not surprising, and indeed should be expected as these systems begin to age.

9.3.2   Discontinuation largely happens as a result of the cost of operation and the failure to perform, although there were a number of other reasons cited. This is a change on last year and probably the result of the difficult financial conditions.

9.4   Traveller Services

Smart and Integrated Ticketing

9.4.1   Overwhelmingly, LAs will be using the ITSO protocol; 98% of respondents indicated that they would use ITSO.

9.4.2   14 LAs indicated that they had ITSO scheme operating licenses in 2010, though this would rise to 26 in 2011. 14,465 buses or about 32% of the bus fleet were fitted with smartcard enabled ticket machines in 2010. If projections are borne out, this would rise to 22,495 or 50% in 2012.

Audio/visual Equipment

9.4.3   Phone hotline services for stop information show a sharp decline this year from 25,027 stops covered in 2009 to 16,270 stops covered in 2010. However, this is artificial and is purely as a result of fewer respondents answering this question. The number of at stop speakers has continued to rise from 2,456 stops in 2009 to 2,848 stops in 2010. Nevertheless this remains a small proportion of all stops in the UK.

9.4.4   Audio/visual provision on buses tells a similar story. All on-bus A/V technology saw a slight fall this year. Other than in London, A/V is limited to a few small systems which usually only cover a small number of buses. Outside London, about 1500 buses are fitted with visual next-stop displays, but only about 100 have any kind of audio facility.

9.4.5   For the first time this year, we asked who paid for the system. By far the most common answer was that the cost was shared usually between the bus operator and the LA, but sometimes with a 3rd party as well. Only 3 LAs reported that the bus operator alone paid for the system.

9.5   Rail Alignment

9.5.1   Most LAs who responded reported at least one train company operating in their area, although many had 2 or more. 24 were making use of schedule data. Those that were, most commonly were using schedule data for journey planning via the web. A similar number (20) make use of real time data, and this is also primarily used for journey planning via the web.

9.5.2   There appears to be very little collaboration with train companies for the purpose of sharing train schedule data – only 8 LAs – and only 2 more indicated plans to do so in the future.

9.6   Expenditure

9.6.1   Expenditure has fallen for the third year running from £26.7M in 2009 to £18.0M in 2010, well down on the peak in 2007 of £62.9M. However, the response rate for this section was considerably down on the 86% last year to 63% which may mean that the 2010 figure is a low estimate.

9.6.2   This drop was consistent across the devolved administrations.

9.6.3   London remains the highest spending region, accounting for 54% of all expenditure on RTI, although its expenditure has dropped in 2010 by £3M to £9.8M. Most of the regions saw drops since last year with the exception of Yorkshire and the Humber and the Southwest of England. In Scotland, no regions saw a rise in expenditure although SWESTRANS was unchanged since last year.

9.6.4   This year we asked respondents about their expenditure on smart and integrated ticketing. 75% of expenditure in this area is covered by government grant. Only £1.4M of expenditure is provided other than via this DfT funding mechanism.

9.7   Issues

9.7.1   The four issues which have the highest impact on LAs are the same as in 2009: financial considerations, availability of power supply, bus fleet movement and cost of maintenance. However, although the same four issues dominate, the level of concern across all issues has fallen. No issue this year has an average level of concern above 2.58 compared with last year when the highest average impact was 3.11.

9.7.2   The issue with the most 4 and 5 responses was the availability of power supply. However, all issues also saw a drop in the percentage of 4 and 5 responses. Coordination with Bus operators saw the largest percentage point fall from 33% down to 9%. Coordination with suppliers and bus operators which were in the top 4 concerns in 2007, have dropped down to 10th and 8th place respectively.

9.7.3   "Financial considerations" has been a concern since 2004, and has now been the primary concern for two years. This is likely to be a reflection of the current economic climate at least in part. Similarly the cost of maintenance has ranked in the top 4 for the second year, but this may be a reflection of the age of some of the systems.

9.7.4 Finally, we asked LAs to rank on a scale of 0-5 how high a priority they attributed to each policy goal. Improving the quality and availability of information were the two top ranking goals. However, all the goals scored between 3 and 4 and most of them scored between 3.8 and 4.0, so the differences between them were very small.

A   Regional splits

A.1   England and Wales

A.1.1   The table below indicates the English and Welsh authorities and the Region to which they belong. For consistency, we have continued to use the breakdown defined by the GO regions which was formally abolished in the 2010 Comprehensive Spending Review. For the purposes of this report, Wales has been treated as a Region and is therefore included here. Survey returns (including nil returns) are marked with an asterisk:

North East
Durham*
Northumberland*
Tyne and Wear/Nexus*
Tees Valley

Yorkshire and The Humber
Doncaster*
East Yorkshire*
North Yorkshire*
South Yorkshire*
West Yorkshire*
N.E. Lincolnshire*
N. Lincolnshire
York*

East Midlands
Derby City
Derbyshire
Leicestershire*
Lincolnshire
Northamptonshire*
Nottinghamshire
Nottingham City
Rutland

East of England
Bedfordshire
Cambridgeshire*
Essex, Southend and Thurrock*
Hertfordshire*
Ipswich*
Luton*
Norfolk*
Peterborough*
Suffolk*

London
London*

South East
Bracknell Forest**

Brighton and Hove*
Buckinghamshire*
East Sussex*
Hampshire*
Isle of Wight
Kent*
Medway*
Milton Keynes
Oxfordshire*
Portsmouth*
Reading
Southampton*
Slough*
Surrey*
West Berkshire
West Sussex*
Windsor and Maidenhead*
Wokingham*

South West
Bath*
Bournemouth*
Bristol*
Cornwall*
Devon*
Dorset*
Gloucestershire*
Plymouth*
Poole*
Somerset
South Gloucester*
Swindon*
Torbay*
Wiltshire and Salisbury*

West Midlands
Herefordshire*
Shropshire*
Staffordshire

Stoke-On-Trent*
Telford and Wrekin*
Warwickshire*
West Midlands*
Worcestershire*

North West
Blackpool*
Balckburn with Darwen*
Cheshire*
Cumbria*
Greater Manchester*
Lancashire*
Merseyside*
Warrington*

Wales
Blaenau Gwent, Torfaen*
Bridgend*
Caerphilly*
Cardiff*
Carmarthenshire*
Ceredigion Penmorfa*
Conwy Bodlondeb*
Denbighshire
Flintshire*
Gwynedd*
Isle of Anglesey*
Merthyr Tydfil**
Monmouthshire
Neath Port Talbot*
Newport
Pembrokeshire*
Powys
Rhondda*
Swansea
Vale of Glamorgan*
Wrexham*

A.2 Scotland – Regional Transport Partnerships

A.2.1 The table below indicates the Scottish authorities and their respective Regional Transport Partnership. Survey returns (including nil returns) are marked with an asterisk:

SWESTRANS
Dumfries and Galloway*

SEStran
City of Edinburgh*
Clackmannanshire*
East Lothian*
Falkirk*
Fife*
Midlothian*
Scottish Borders*
West Lothian*

TACTRAN
Angus*
Dundee City
Perth and Kinross*
Stirling*

Nestrans
Aberdeen City*
Aberdeenshire*

HITRANS
Argyll and Bute (less Helensburgh and Lomond)

Comhairle nan Eilean Siar*
Highland*
Moray*
Orkney*

ZeTrans (formerly Shetland Transport Partnership)
Shetland

SPT (Strathclyde Partnership for Transport)
Argyll and Bute (Helensburgh and Lomond)
East Ayrshire
East Dunbartonshire*
East Renfrewshire
Glasgow City *
Inverclyde*
North Ayrshire (including Isle of Arran and Isle of Cumbraes)
North Lanarkshire*
Renfrewshire*
South Ayrshire
South Lanarkshire*
West Dunbartonshire*

A.3 Metropolitan and non-metropolitan areas

A.3.1 The following PTEs and cities are considered as 'metropolitan areas':

– South Yorkshire PTE;
– West Yorkshire PTE;
– West Midlands PTE;
– Greater Manchester PTE;
– Merseyside PTE;
– City of Edinburgh;
– City of Glasgow.

A.3.2 London is considered to be a single entity, and the rest of the local authorities are taken to be non-metropolitan areas.