REVIEW OF THE TRANSPORT SCOTLAND WEBSITE

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Acknowledgements
We would like to take this opportunity to thank all participants in the research.

EXECUTIVE SUMMARY

Background

1. This report presents the outcomes of a review of the Transport Scotland website, commissioned on behalf of Transport Scotland by Scottish Government Social Research. The review comprised an online survey of visitors to the Transport Scotland website, usability testing with users and non-users of the site including disabled users, depth interviews with key stakeholders and an accessibility audit of a sample of pages from the website.

2. The Transport Scotland website (www.transportscotland.gov.uk) was launched when the agency was created in 2006. After two and a half years following the agency's launch, it was considered appropriate to reflect upon whether the role of the website had changed and whether the emphasis of the website should move towards providing information about the work and projects that Transport Scotland is responsible for and what the agency delivers, rather than informing people about the organisation. In addition, it was recognised that information on particular projects or reports may be difficult for users to locate and that some recent content does not fit easily in the current navigation structure.

Aims and Objectives

3. The overall aims of the research were to review the existing Transport Scotland website and to provide suggestions for improvement, based on the research findings, which will inform the next stages of the website development. In particular, the objectives were to:

- Explore users' and key stakeholders' use of the website and views on it
- Review the content of the site to assess if the information is useful, up-to-date and understandable
- Review the homepage
- Review the 'Projects' page
- Review the navigation and information architecture of the site
- Review the design of the website
- Identify whether users and stakeholders would like information presented in other formats
- Identify the strengths and weaknesses of different aspects of the site, and provide recommendations on how the website could be improved
- Undertake accessibility tests, to ensure it meets Web Content Accessibility Guidelines Priority 2 accessibility standards

Methodology

4. The review comprised the following methodologies:

- an online survey of 496 visitors to the website
- 10 usability interviews with members of the general public eligible for concessionary travel or affected by Transport Scotland projects, comprising 5 interviews with people who had previously used the site and 5 interviews with those who had not
- 10 usability interviews with transport professionals, MSP (Members of the Scottish Parliament) researchers and representatives from transport special interest groups
- 10 depth interviews with key stakeholders: MSPs, journalists and senior employees from Scottish Government, Local Authorities and Transport Scotland
- 8 usability interviews with members of the general public who have a disability
- An accessibility audit of a sample of 20 pages from the website

5. Fieldwork took place between 8 July and 12 November 2008.

Main Findings

Profile of visitors to the website

6. The vast majority of respondents to the online survey were male (76%), while 24% were female. Twenty three per cent of respondents were aged 34 or under, 43% were aged between 35 and 54 and 32% were aged 55 or over. It should be noted that, due to the self-selecting nature of survey respondents, the results from the online survey cannot necessarily be generalised to the wider population of website users.

7. Most (85%) respondents to the online survey lived in Scotland. Across all respondents, 32% lived in Glasgow and Strathclyde, 20% in Edinburgh and Lothians, 15% in Central Scotland and Fife and 19% in other areas of Scotland. One in ten respondents lived in other parts of the UK and 5% were from outside the UK.

8. Twenty-two per cent of respondents worked in the public sector while a similar proportion (20%) worked in the transport sector. Twenty-nine per cent were employed in other sectors while 19% were retired and 4% were students.

9. Nineteen per cent had used the website at least weekly over the previous six months and the same proportions had used it once or twice a month. Twenty-eight per cent had previously used the website, but only once or twice in the last three months or six months. A third of all respondents were using the Transport Scotland website for the first time.

Role of the homepage

10. Stakeholders (a general term used throughout the report to describe all users of the Transport Scotland website) strongly agreed that the Transport Scotland website should continue to provide a concise explanation of the remit of the organisation. Many stakeholders believed that there is a lack of understanding, particularly among the general public, about who is responsible for what areas of transport in Scotland.

11. It was apparent from the usability interviews that few people read the current text on the homepage in any detail. Most of those who participated in the usability sessions scanned the page very quickly, without taking in details. It is important to keep the description of the role of Transport Scotland brief and consider using bulleted lists rather than paragraphs of text to highlight the agency's responsibilities.

12. Stakeholders also agreed that the website needed to provide a clear route into the main website content. Visitors to websites rarely read large amounts of text, but want to click links to explore a website. The navigation needs to recognise and facilitate this, by providing clear links to the content that most visitors will be looking for.

13. The homepage design generally met people's expectations, although a small number of stakeholders commented that the website was not particularly engaging or compelling.

14. The Transport Scotland homepage currently has some highly visible links to external websites, aimed at re-directing those who have landed on the website in error. Stakeholders agreed that these links should be retained in any new design, because there was an assumption that some people do visit the Transport Scotland website in error, when looking for traffic information or for help in planning a journey. Some stakeholders wondered whether additional links might be useful, such as information on ferries and airports, which are transport-related but fall outside the remit of Transport Scotland.

15. Stakeholders agreed that the website homepage should feature latest news. This is one of the key reasons why stakeholders visit the website and it should be easy for them to find. In addition, providing some content on the homepage that is current and frequently updated ensures that visitors think that the site is up-to-date, which is important in generating trust for the content on the website.

Website design

16. Nineteen per cent of those who completed the online survey strongly agreed with the statement "the website looks and feels well designed", while 47% tended to agree with this. In contrast, just 10% disagreed with this statement.

17. The colour scheme used on the Transport Scotland website was generally considered to be what was expected of a Government agency. A small number of stakeholders, while in agreement that this was what they had expected, felt that the blue and white colour scheme used was very traditional and showed a lack of originality in design.

Finding information

18. Among those who completed the online survey, 31% came to the website on the occasion they undertook the survey to find details of a specific transport project. This is followed by looking for an item of news displayed on the Transport Scotland website (20%) and general information related to rail (17%), information on concessionary travel (16%) and general information related to roads (16%).

19. First-time visitors were more likely than average to look for information on concessionary travel (31% of first-time visitors did so).

20. Visitors reported that they were generally successful in finding the information they had come to the website to look for. Forty-six per cent of those completing the online survey found all of the information they were looking for, with a further 22% finding most of it. However, 26% reported that they found only some or none of the information they were looking for.

21. The primary navigation menu at the top of the main page content was the route that most people used to enter the main website content. Generally, there was a high level of understanding about what content would be expected under each of the links, although some duplication was felt to exist. In particular, many stakeholders were unsure of the differences between 'Projects' and 'Reports' and why these sections are separated out from the more general 'Road' and 'Rail' sections.

22. Most users successfully noticed and used the secondary navigation menu on the left hand side of the page to drill further down into the content of each section. However, a minority of stakeholders simply did not see this menu and so failed to find further content within each section.

23. Thirty seven per cent of visitors who completed the online survey had made use of the search tool on the Transport Scotland website. Of these, just 8% reported that the search tool helps them to find all of the information they are looking for, although 43% state that the search helps them most of the time. However, 34% of those who have used the tool say that it helps them only some of the time and 12% say that it does not help them to locate information on the website.

The website content

24. Generally, members of the general public did not understand the jargon and acronyms used throughout the website and this gave them the impression that the website was mainly aimed at professionals working in the transport sector. However, a number of transport professionals and key stakeholders also experienced this.

25. All stakeholders considered the homepage and the main road, rail and concessionary travel pages to be very text heavy. Across the usability sessions, transport professionals and members of the general public only scanned this content and very few read these pages in detail. Rather than long pages of text, stakeholders described how they expected to be able to read a brief summary of information on these pages and be able to link through to find further details.

26. Reports are widely used by transport professionals and those working in the public sector. Those participating in the usability sessions were able to successfully navigate to the reports section, although there was a widespread expectation that after selecting the 'Reports' link in the primary navigation menu, users would be presented with a list of all the reports available, and not have to click further into the website. Indeed, some users were stuck for some time on the 'Reports' landing page, as they could not see how to progress, with the three links in the secondary navigation menu not visible to them, as they were aligned with the image at the top of the page and not with the content that the users were looking at.

27. There was a lack of understanding of the three links in the secondary navigation menu, which caused problems for stakeholders. Few understood the difference between 'Consultation Papers and Responses' and 'Publications and Guidelines' and so were unsure which to click into when looking for documents. Merging these two sections into one will remove this challenge for website visitors.

28. The news section of the website met expectations of users, by providing links to the latest news stories and an archive of older articles, searchable by date. The number of news stories displayed during the period of this research was never high, so it was easy for those participating in the usability sessions to read through them.

Interest in website enhancements

29. Respondents to the online survey were presented with a list of different enhancements and asked to indicate whether each is something they would like to be able to do when using the Transport Scotland website. 49% of respondents stated that they would like to be able to download reports, 36% stated that they would like to be able to download or watch videos while 30% said they would like to subscribe to an e-mail newsletter. Only 15% answered that they would be interested in downloading or listening to podcasts. It is also worth noting that a proportion (20%) stated that they were not interested in any of these features. There is considerable interest and support among stakeholders for the development of the Transport Scotland website and ideas for new ways of displaying content and new functionality were positively received.

Conclusions

30. The website generally meets expectations in terms of the design, content and functionality and users can successfully navigate it to access the key content made available.

31. A number of key usability and accessibility barriers exist, which impact upon the ease with which users can locate information. The website has a number of accessibility problems and there is much work to be done before the website meets the AA standards of the Web Content Accessibility Guidelines, published by the World Wide Web Consortium. Without this work being undertaken, some users with disabilities will continue to find it difficult to access the web content.

32. The content on the website is generally well-received by stakeholders, with material being considered specific, useful and easy to understand. However, the content provided on the website is primarily text-based, which means that users skim

through it and miss important details contained within the material. The website also uses a lot of jargon and acronyms, which few users understand.

33. A series of prioritised recommendations for the future development of the Transport Scotland website are included in the final chapter of the report.

CHAPTER 1: INTRODUCTION

1.1 This report presents the outcomes of a review of the Transport Scotland website, commissioned on behalf of Transport Scotland by Scottish Government Social Research. The review comprised an online survey of visitors to the Transport Scotland website, usability testing with users and non-users of the site as well as disabled users, depth interviews with key stakeholders and an accessibility audit of a sample of pages from the website. This chapter sets out the background to the review and its aims and objectives.

Background

1.2 Transport Scotland is the national transport agency for Scotland. The agency was launched in January 2006. Its purpose is to help deliver the Scottish Government's vision for transport and its £3 billion capital investment programme over the next decade. Transport Scotland is responsible for overseeing the running of Scotland's trunk roads and rail networks, and running the national scheme for concessionary travel. It also helps to deliver a number of major infrastructure projects. Other parts of Scottish transport policy and delivery fall under the remit of the Scottish Government, local authorities or the UK Government.

1.3 Transport Scotland works in partnership with private sector transport operators, local authorities and the Scottish Government. It also works closely with the seven Regional Transport Partnerships (RTPs), which take a strategic view of the transport needs of people and businesses in each region.

1.4 The Transport Scotland website (www.transportscotland.gov.uk) was launched when the agency was created in 2006. From the outset, the website has played a vital role as a key communication medium to explain the purpose and function of the agency, as well as offering information about the work it does. Prior to setting up the website, Transport Scotland identified the following aims for it:

- To inform key stakeholders and the general public about the role and responsibilities of Transport Scotland and its context within Government
- To provide details of road projects and schemes
- To provide links to, and details of, rail projects that the agency is involved in
- To provide information about the national concessionary travel scheme

1.5 After two and a half years following the agency's launch, it was considered appropriate to reflect upon whether the role of the website had changed and whether the emphasis of the website should move towards providing information about the work and projects that Transport Scotland is responsible for and what the agency delivers, rather than informing people about the organisation. In addition, it was recognised that information on particular projects or reports may be difficult for users to locate and that some recent content does not fit easily in the current navigation structure.

Aims

1.6 It is against this background that the review of the website was commissioned, with a view to using the information gathered to inform the future development of the website. Transport Scotland would like the redeveloped website to provide users with content that is easily accessible, well written, accurate and current. In fulfilling these aims, Transport Scotland has identified that the website should:

- Offer high quality, up-to-date content
- Meet the needs of internal stakeholders and Ministers, and also those of external users
- Be accessible and usable and comply with Government standards
- Be at least as good a standard as its peers, such as:
    - The Scottish Government (www.scotland.gov.uk)
    - The Department of Transport (www.dft.gov.uk)
    - The Highways Agency (www.highways.gov.uk)
- Have a modern look

1.7 The overall aims of the research were to review the existing Transport Scotland website and to provide suggestions for improvement, based on the research findings, which will inform the next stages of the website development.

1.8 More specifically, the objectives of this research were to:

- Explore users' and key stakeholders' use of the website and views on it (in relation to the content, design and usability) and find out if it meets their needs and expectations
- Review the content of the site to assess if the information is useful, up-to-date and understandable
- Review the homepage. What should be on the homepage, given that Transport Scotland is no longer a 'new' Government Agency and its content caters for a broad range of stakeholders such as:
    - Concessionary travel information for older/younger persons
    - Information about large transport projects (e.g. the Forth Replacement Crossing) for those affected by these projects
    - Scottish Transport Appraisal Guidance for transport specialists
- Review the 'Projects' page. Is the structure of the 'Projects' page clear to enable users to find a specific project that interests them and is the information given about the project useful?
- Review the navigation and information architecture of the site and undertake usability tests to assess whether key content can be found quickly
- Consider the navigation and design of the site with respect to the variety of stakeholders who will use the site and the responsibilities that Transport Scotland covers
- Undertake accessibility tests, to ensure it meets Web Content Accessibility Guidelines AA accessibility standards[1] and identify specific problems that users (including users with special needs) have encountered whilst using the site

[1] A set of guidelines produced for website developers to ensure that their website content is accessible for people with disabilities http://www.w3.org/WAI/guid-tech.html

- Review the design of the site
- Identify whether users and stakeholders would like information presented in other formats (e.g. e-newsletter; podcasts; video)
- Identify the strengths and weaknesses of different aspects of the site, and provide recommendations on how the website could be improved

CHAPTER 2: METHODOLOGY

2.1 This chapter provides details of the methodologies used to conduct the review.

2.2 The review comprised the following methodologies:

- an online survey of 496 visitors to the website
- 10 usability interviews with members of the general public eligible for concessionary travel or affected by Transport Scotland projects, comprising 5 interviews with people who had previously used the site and 5 interviews with those who had not.
- 10 usability interviews with transport professionals, MSP (Members of the Scottish Parliament) researchers and representatives from transport special interest groups
- 10 depth interviews with key stakeholders; MSPs, journalists and senior employees from Scottish Government, Local Authorities and Transport Scotland
- 8 usability interviews with members of the general public with a disability
- an accessibility audit of a sample of 20 pages from the website

Online survey

2.3 An online survey was placed on the Transport Scotland website from 8 July to 26 August 2008 to gather visitors' views of the website. The survey invitation appeared to all visitors to the Transport Scotland homepage during the survey period. It informed them of the purpose of the survey and invited them to participate during their visit to the website.

Questionnaire design

2.4 The online questionnaire was designed by Ipsos MORI in close consultation with Transport Scotland and the Scottish Government. The survey content was piloted among members of staff at Transport Scotland who were familiar with the website.

2.5 The survey contained 23 questions covering:

- use of the website
- finding information on the website
- satisfaction with the website design, content and usability
- improvements to the website
- respondent demographics

2.6 The full questionnaire can be found in Appendix One.

2.7 The majority of the survey questions took the form of 'closed' questions, in which respondents were invited to select their answer from a list of possible responses.

Respondents were, however, given the chance to suggest improvements to the website in their own words.

2.8 Respondents were also asked whether they would be willing to participate in follow-up research to explore their views towards the site in more detail. Respondents meeting the eligibility criteria (described in paragraph 2.19 to 2.20) were then invited to participate in the usability testing.

Response to the survey

2.9 During the fieldwork period, there were 34,898 unique visitors[2] to the Transport Scotland website. Of these, 20,064 visited the homepage during their visit. The survey invitation was displayed the first time a visitor visited the homepage. A total of 496 website visitors participated in the online survey on the Transport Scotland website. Based on the number of visitors to the website during the survey period, this gives response rate of approximately 2.5%[3].

2.10 In order to validate responses to the survey, measures were put in place to ensure that respondents could not complete the survey more than once. When the survey appeared, a cookie was placed on the respondent's computer to prevent the survey from appearing again. This also served to ensure that frequent users of the site were not frustrated by the survey invitation popping up every time they used the site.

Analysis of the online survey data

2.11 Prior to the full analysis of the findings, data tables were produced using software that takes the raw data from the online survey and reorganises it into data tables that illustrate responses to each question overall and by pre-determined subgroups. The data tables were manually checked against the raw data file to ensure that they had been compiled accurately. Responses to each question were analysed against three key variables, namely:

- sector of occupation (transport, public, other sector, retired, student, unemployed)
- frequency of website use (first-time user, frequent user, infrequent user[4])
- information looked for during the website visit (news, road, rail, project, report and concessionary travel)

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[2] A unique visitor is defined as a host (computer) that has made at least 1 hit on 1 page in the the reporting period. If this host (computer) makes several visits during this period, it is counted only once.
It should be noted that website statistics are not always completely accurate.

[3] As website statistics are not always completely accurate, it is not possible to calculate an exact response rate.

[4] Frequent users are defined as those who selected 'all or most days' and those who selected 'once or twice a week' in response to the question "How often have you used the Transport Scotland website in the last six months?" Infrequent users are defined as those who selected 'once or twice in the last month' 'once or twice in the last three months' and those who selected 'once or twice in the last six month' in response to the aforementioned question.

2.12 These analyses enabled us to identify any variation in the views and experiences of different sub-groups of users. It should be remembered at all times that the results in this report are only based on a sample of visitors to the website and not all visitors, so they are subject to sampling tolerances, meaning that not all differences will be statistically significant. A guide to statistical reliability is provided in Appendix Two. However, this assumes that the sampling was entirely random, which is not the case with this survey and so must be used as a rough guide only.

Usability testing

2.13 In order to explore views of the website in more detail, 20 one-on-one usability interviews were conducted between 6 August and 9 September 2008.

Profile of participants

2.14 In order to ensure that the overall profile of participants reflects the broad range of users of the Transport Scotland website, participants were recruited to meet a set of criteria agreed between Scottish Government, Transport Scotland and Ipsos MORI. The profile of participants recruited is shown in Table 2.1 below. The sample included a mix of respondents in terms of age, sex and frequency of use of the site.

Table 2.1: Usability testing participant profile

Stakeholder Group	Number of interviews
People covered by concessionary travel schemes	5
People affected by Transport Scotland's work or projects	5
Researchers working for MSPs	2
Rail industry and road interest groups representatives	4
Transport / engineering consultants	4

2.15 The majority of those who took part in the usability interviews had used the website and had interesting thoughts on how to develop the site to best meet their needs. However, it is from non-users that the most insightful usability observations can often be found; an experienced user of a website may well be able to locate information quickly and easily, but that is not to say that the website is easy to use, simply that they have learnt by previous experience how to overcome usability barriers that exist. For this reason, the groups of people covered by concessionary travel schemes and those affected by Transport Scotland's work or projects comprised both users of the website and non-users of the website. All participants in the usability tests had experience of using the internet.

Recruitment

2.16 Participants were recruited through a variety of methods. The methods used for each group are detailed below.

People covered by concessionary travel schemes

2.17 For the usability testing element of the project, people were recruited who were eligible for concessionary travel[5] on account of their age (either older or younger people), rather than on account of a disability. Those with a disability were included under a separate part of the review (see section 2.41 – 2.45).

2.18 Non-users of the Transport Scotland website were recruited using face-to-face (on-street) recruitment in Glasgow and Edinburgh. A question in the recruitment questionnaire was used to determine whether or not they had previously visited the Transport Scotland website (along with other websites so that they would not know for whom the research was being conducted).

2.19 Current users of the website were recruited both face-to-face, in the same way described above for non-users, and by telephone among participants who had completed the online survey and indicated a willingness to be approached to participate in a further stage of the research.

People affected by Transport Scotland's work or projects

2.20 Recruitment was conducted using face-to-face recruitment and by telephone, in the same way described above for people eligible for concessionary travel.

2.21 As part of the recruitment screener, people were asked whether they were affected by the Forth Replacement Crossing (Edinburgh participants only) and the Glasgow Airport Rail Link (Glasgow participants only).

2.22 Those eligible for concessionary travel and those affected by Transport Scotland's work or projects who participated in a usability interview were compensated for their time and travel costs with a cash payment of £30.

Other Stakeholders

2.23 Recruitment of the other stakeholders (researchers working for MSPs, rail industry and road interest groups representatives and transport/engineering consultants) was conducted by telephone. Suitable individuals were selected using the following methods:

- using existing contacts within transport and engineering consultancies
- contacting MSP researchers working for MSPs who are on the Transport, Infrastructure and Climate Change Committee

[5] Those aged sixty or over and many disabled people who live in Scotland are able to travel free on any local bus and scheduled long distance coach services in Scotland throughout the day. Additionally, all 16 to 18 year olds and young full-time volunteers up to the age of 25 are entitled to concessionary travel on buses, rail and ferries throughout Scotland. The young person's scheme provides a third off bus and rail travel throughout Scotland and gives those who live on a Scottish Island two free return ferry journeys to the mainland each year. See http://www.transportscotland.gov.uk/concessionarytravel for more details.

- liaison with Transport Scotland and the Scottish Government to identify individuals who would be particularly suitable to participate
- internet searches to find other suitable journalists and MSPs

Structure of usability interviews

2.24 Interviews with people covered by concessionary travel schemes and people affected by Transport Scotland's work or projects were conducted in viewing studios in Glasgow and Edinburgh[6], giving the chance for members of staff at Transport Scotland and their website designers to observe the interviews. This is extremely useful as it allows those involved in the design of the website to see first-hand the issues that people have when looking for information on the website. These interviews were video recorded, with the permission of the participant. Participants were informed during recruitment that interviews would be observed and video recorded. Participant personal data was stored securely and not made available to employees of Transport Scotland or the Scottish Government, nor anyone else. Participants were informed of the purpose of the research, how their data would be used and that any personal information they supplied would remain confidential.

2.25 In order to make it more convenient for them to take part, interviews with participants from the other stakeholder groups took place at their offices or at the Ipsos MORI Edinburgh office. Therefore, it was not possible for the Transport Scotland team to observe these.

2.26 Each interview lasted between 45 minutes and one hour and involved a participant sitting at a computer with the moderator next to them. The participant was in control of the computer and was guided through the interview by the moderator. The website was explored using both free browsing and completion of a set of tasks, with the participant asked to vocalise their thoughts as they went through the website.

2.27 A discussion guide was designed by Ipsos MORI, in conjunction with Transport Scotland and the Scottish Government. This covered:

- general use of the internet
- initial exploration of the website
- completion of a number of tasks (up to eight from a list of 14)
- detailed exploration of views of the main pages of the website covering content, navigation, design, language and terminology
- review of the Highways Agency, Scottish Government and Department for Transport websites and comparisons with the Transport Scotland website
- interest in new ways of presenting content on the website
- suggestions for improvement

2.28 The full discussion guide, including the list of tasks, can be found in Appendix Three. A review of how successful users were in completing the tasks can be found in Appendix Four.

[6] The Glasgow View, Douglas Street, Glasgow and 60 Watt Research, West Maitland Street, Edinburgh.

Depth interviews with key stakeholders

2.29 In addition to the usability interviews, 10 depth interviews were conducted with other key stakeholders between 28 July and 12 November 2008. These interviews focused on the role that the website plays in information dissemination and whether the design and content reflects the aims and the status of Transport Scotland.

Profile of participants

2.30 Table 2.2 shows the profile of the respondents who participated in the stakeholder depth interviews.

Table 2.2: Key stakeholder participant profile

Stakeholder Group	Number of interviews
Journalists reporting on Scottish transport issues	2
Senior employees in Transport Scotland	2
Senior employees in the Scottish Government	2
Senior employees in local authorities	2
MSPs who are members of the Transport, Infrastructure and Climate Change committee	2

2.31 All participants were recruited by telephone. Suitable journalists and MSPs were found using internet searches. Transport Scotland provided guidance about the most appropriate individuals to interview within Transport Scotland, the Scottish Government and local authorities.

Structure of the depth interview

2.32 The interviews lasted between 40 minutes and one hour and were conducted in the respondent's office or at the office of Ipsos MORI in Edinburgh.

2.33 A discussion guide was designed by Ipsos MORI, in conjunction with Transport Scotland and the Scottish Government. The guide covered stakeholders' use of the Transport Scotland website, their perceptions of the design and navigation of the site, whether the content met their information needs and any improvements that they would like to see made to the website. A copy of the discussion guide can be found in Appendix Five. The guide was designed to be flexible in order to cover the issues that were most relevant to the particular interviewee. The interviewer took detailed notes throughout all of the interviews, which were used for analysis.

Analysis of the usability and depth interviews

2.34 Analysis of the results of the usability and depth interviews involved identifying common themes that cross the different pages of the website (such as feedback on overall design and content issues), as well as on a page by page basis, based upon notes made by the interviewer, observers and a video review of key parts of interviews. Throughout the report, we will comment on recommendations that will improve the experience of visitors to the Transport Scotland website. A full list of recommendations, listed by section, in priority order, is provided in Chapter Eleven of

this report. Quotes from the usability and depth interviews are used extensively throughout this report to illustrate key issues that are reported.

Accessibility testing

2.35 In order to establish whether the current Transport Scotland website meets AA accessibility standards[7] and to identify any problems disabled people experience using the website, Ipsos MORI worked with AbilityNet[8], a national charity that helps disabled adults and children to use computers and the internet.

2.36 There were two parts to the accessibility testing: an audit of the website to ensure that it is compliant to Web Content Accessibility Guidelines (WCAG) checkpoint AA[9] and moderated usability testing sessions of the Transport Scotland website among eight disabled users.

Accessibility audit

2.37 Experienced AbilityNet auditors tested the accessibility of the Transport Scotland website between 24 and 28 July 2008. In order to cover a range of page types across different sections of the website, twenty pages were selected by Ipsos MORI and Transport Scotland for testing. These pages represented the different ways in which content is displayed upon the website and largely focused on the more complex pages, including those with interactive tools, tables and graphics. Auditing the more complex pages of a website ensures that all accessibility issues are identified as some might not be observed if text-only pages are selected.

2.38 The audit involved testing each of the twenty pages selected for the audit against the 46 WCAG Priority One and Priority Two checkpoints. Whilst some of these checks could be automated, the majority of checkpoints required manual evaluation. As an example, while the presence of ALT tags[10] could be checked for automatically, their appropriateness required manual checking in every instance.

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[7] Website accessibility refers to the practice of making websites usable for people with disabilities. The Web Content Accessibility Guidelines (WCAG) are a set of guidelines designed to make websites accessible. There are three priority levels. Web designers must adopt Priority One requirements, otherwise it will be impossible for one or more groups to access the web content. Conformance to this level is described as 'A'. Web designers should adopt Priority Two requirements, otherwise some groups will have trouble accessing content. Conformance to this level is described as 'AA'. Web designers may adopt Priority Three requirements, to make it easier for some groups to access content. Conformance to this level is described as 'AAA'.

[8] AbilityNet is a national charity helping disabled adults and children use computers and the internet by adapting and adjusting their technology. AbilityNet offer accessibility auditing, usability testing with diverse users and web development as well as accessibility training courses. Further information about the organisation can be found at www.abilitynet.org.uk

[9] A set of guidelines produced for website developers to ensure that their website content is accessible for people with disabilities http://www.w3.org/WAI/guid-tech.html

[10] ALT tags present text associated with a web page graphic that gets displayed when the user hovers the mouse over the graphic. ALT tags should convey what the graphic is for or about and contain good relevant keywords. ALT tags make web pages more accessible to the disabled. For example, a vision-impaired user may have a web browser that reads aloud the text and ALT tags on a page.

2.39 The main tool used to assist in the evaluation process was the web accessibility toolbar[11] which gives access to a range of features to facilitate accessibility testing. These features include the colour contrast checker, quick links to the WC3 HTML Validation page and shortcuts to disable images, Javascript and CSS within the browser (which replicates how disabled users accessing with assistive technologies will view the page). In addition, direct access to the underlying page code was required to check other issues and was accessed via the 'View Source' menu option in Internet Explorer.

2.40 The findings of the audit are presented in a separate document, which can be found in Appendix Six.

Disabled user testing

2.41 Moderated disabled user testing was undertaken by AbilityNet, in London, on 5 and 6 August 2008, with eight people with a disability.

Profile of participants

2.42 All eight participants were members of AbilityNet's panel of disabled website users. None had used the Transport Scotland website previously. Table 2.3 below shows the participants' disabilities and the access methods or assistive technologies used by each.

Table 2.3: Profile of disabled participants

Disability	Access method/assistive technology
Severe vision impaired	Screen reader
Medium vision impaired	Magnification software
Mild vision impaired	Large text/high contrast
Severe motor difficulties	Voice recognition
Motor difficulties and cognitive impairment	No special access methodologies
Mild motor difficulties	Fine mouse control difficulties
Medium dyslexic	No special access methodologies
Learning disability	No special access methodologies

Structure of the tests

2.43 The disabled user testing was undertaken in broadly the same manner as the usability testing described above, though each session lasted slightly longer at between one hour and 90 minutes. The disabled user testing comprised solely of the moderator asking participants to complete from the same range of tasks as used in the usability sessions. On average, users completed 7 of the 14 tasks. As with the general public and transport professionals' usability testing, the participant sat at the computer with a moderator beside them. However, the moderator remained passive throughout the session, with the user in control of the computer at all times. The user was asked to comment on their actions throughout the testing session.

[11] The Web Accessibility Toolbar is a free tool which allows for the manual testing of website accessibility. It can be downloaded from http://www.visionaustralia.org.au/ais/toolbar

Analysis of the disabled user test results

2.44 Disabled users, while identifying usability issues relating to their disability, also identified standard usability issues. Where an issue was identified both by users with and without a disability, no distinction has been drawn out in this report. Where an issue was identified only by one or more disabled users, specific reference to this fact has been made.

2.45 As well as a summary of reaction to the website's homepage, design, layout and navigation, each of the tasks was analysed at an individual participant level, since a task that is easy for a user with one impairment might be much harder for someone with a different impairment. The task analysis focused on identifying the positive and negative experiences the user had in completing the task, the success rate across all users in completing it and recommendations for the design of the site to minimise barriers and improve accessibility. Findings from the disabled user tests have been incorporated into this report.

Presentation and interpretation of the findings

Online survey findings

2.46 A pop-up survey on the Transport Scotland website was adopted as it is the most effective method by which to reach a broad range of current users of the website. However, in all quantitative surveys there exists the potential for bias because of differences in profile, attitude or behaviour among those who respond and those who do not. With this particular survey, where there was little control over who responded to the survey and a low response rate, the likelihood of non-response bias is high. For example, visitors with a keen interest in the website, visitors with a lot of time to spare or those with a particular grievance about the website are perhaps more likely to take part than other users. Therefore, the results should be seen as indicative, rather than statistically representative, of the whole population of visitors to the site.

2.47 Where percentages reported on do not sum to 100%, this may be due to computer rounding, the exclusion of 'don't know' categories or because multiple answers were possible.

Qualitative research findings

2.48 The usability interviews, depth interviews and the accessibility interviews used qualitative methods. Qualitative research is often compared and contrasted with quantitative research. Qualitative research is concerned with understanding opinions and experiences ("why?", "how?" etc) rather than measurement ("how many?", "how often?" etc). The qualitative component of the review explored attitudes to the website in much more depth then the quantitative research. The aim of qualitative research is not to generalise to the wider population in terms of the *prevalence* of attitudes (e.g. '20% of Transport Scotland website users do not like the colours used on the site), but to identify and explore issues and themes relating to the subject being researched, in depth.

A note on reporting usability research

2.49 Usability research has more in common with ethnographic interviewing than traditional qualitative research, in that much of the learning comes from observation, rather than verbal feedback. Observation of task completion, coupled with verbal feedback and supplemented by the experience of the usability moderator are what form the basis for recommendations for website improvement.

A note on the audience definitions used in this report

2.50 Throughout this report, we have used the following terms to define the different audiences contacted during the review. These are summarised here.

'Users' / 'Stakeholders':
General terms to describe all Transport Scotland website users.

'Respondents to the online survey' / 'Respondents':
The 496 visitors to the Transport Scotland website (or a sub-set of the 496) who completed the online survey.

'Those who participated in the usability sessions':
The 20 participants who took part in the usability tests, comprising members of the general public, those working in transport consultancies / engineering firms and researchers working for MSPs.

'Members of the general public':
10 members of the general public who participated in the usability tests.

'Transport professionals':
Those working in transport consultancies, engineering firms and local authority transport departments.

'Disabled users' / 'Users with an impairment':
The eight disabled users who participated in the usability testing

'Key stakeholders':
Senior personnel at Transport Scotland, the Scottish Government, MSPs and journalists

CHAPTER 3: PROFILE OF TRANSPORT SCOTLAND WEBSITE USERS

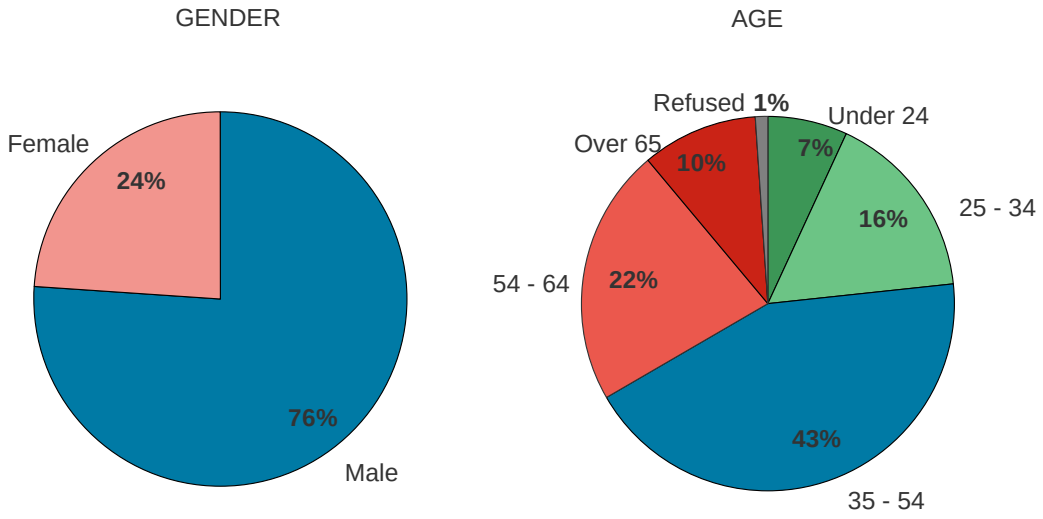
- The vast majority of online survey respondents were male (76%).
- Most (85%) of the online survey respondents lived in Scotland. Ten per cent lived in other parts of the UK and the rest from outside the UK.
- Twenty two per cent of the online survey respondents worked in the public sector while a further 20% worked in the transport sector.
- A third of the online survey respondents had never visited the Transport Scotland website previously. Nineteen per cent used the website at least weekly, while 47% had visited the website before, but did not access it as often as once a week.

3.1 This chapter provides an overview of the demographic profile of respondents to the online survey, including sex, age, geographical region, sector of employment and disability. It also covers frequency of use of the website and ways used to reach the website. As discussed in section 2.12 above, we cannot be sure that the results from the online survey are representative of all Transport Scotland website visitors due to self-selecting nature of the survey. Therefore, the following information is indicative, at best, of visitors to the Transport Scotland website.

3.2 The vast majority of respondents to the online survey were male (76%), while 24% were female.

3.3 As shown in Figure 3.1, 23% of respondents were aged 34 or under, 43% were aged between 35 and 54 and 32% were aged 55 or over.

Figure 3.1: Respondents to the online survey, by gender and age



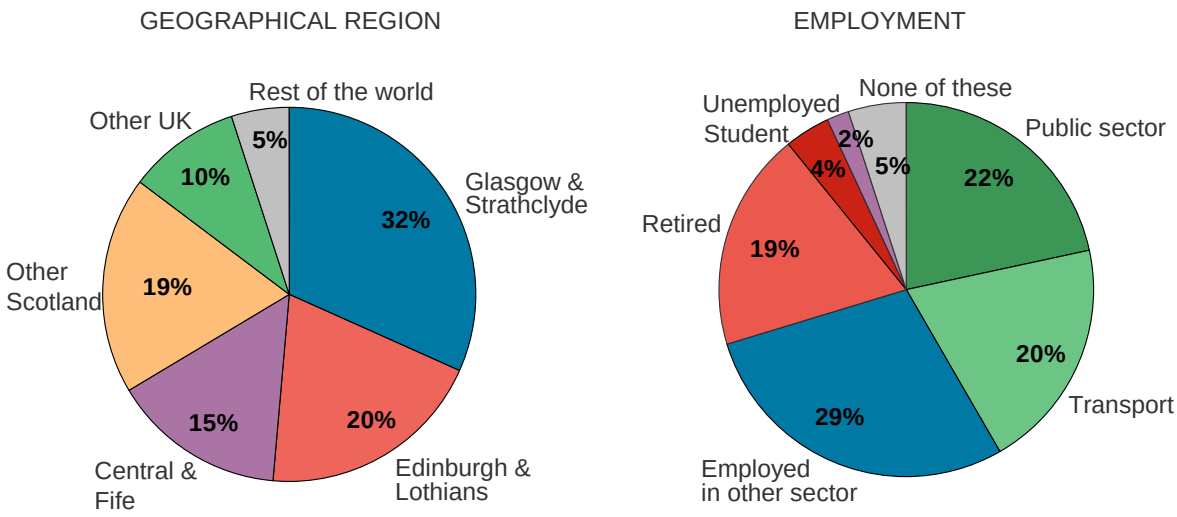
Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

3.4 As shown in Figure 3.2, the vast majority (85%) of respondents lived in Scotland. Across all respondents, 32% lived in Glasgow and Strathclyde, 20% in Edinburgh and Lothians, 15% in Central Scotland and Fife and 19% in other areas of Scotland. One in ten respondents lived in other parts of the UK and 5% were from outside the UK.

3.5 Twenty-two per cent of respondents worked in the public sector while a similar proportion (20%) worked in the transport sector (Figure 3.2). Twenty-nine per cent were employed in other sectors while 19% were retired and 4% were students. While the categories are not mutually exclusive, the survey was set up so that respondents could only select one answer.

Figure 3.2: Respondents to the online survey by geographical region and sector of employment



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

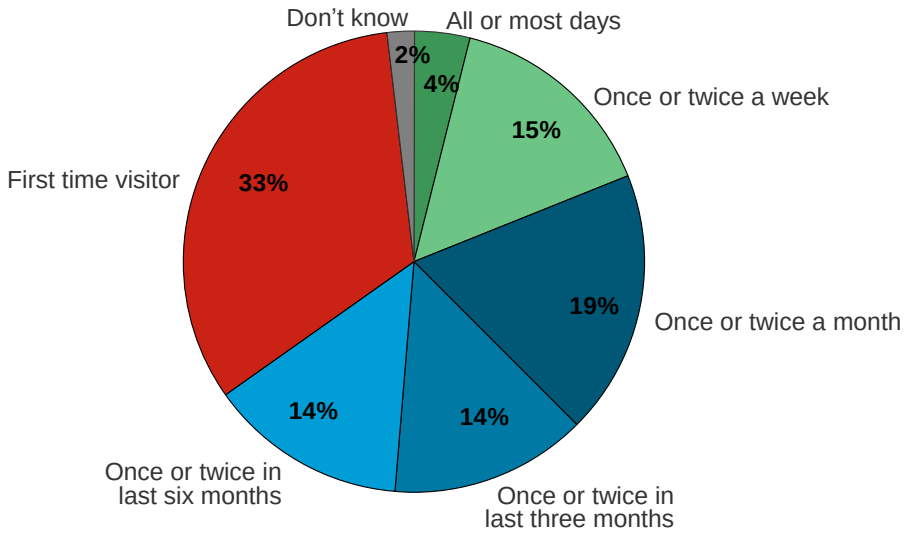
3.6 Eleven per cent of respondents to the online survey had a disability or learning difficulty. Due to the small numbers involved the results of the online survey have not been analysed by disability. Instead, the disabled user testing and the website accessibility audit were used to identify problems experienced by people with a disability or learning difficulty when using the Transport Scotland website.

3.7 Among those who reported a disability or learning difficulty, most (35%) reported having physical mobility problems, rather than issues that particularly affect their usage of computers. Four per cent of respondents had severe visual impairments and none had a condition which substantially limited activities such as using a mouse or keyboard. 14% reported deafness and 14% a learning difficulty. 26% preferred not to provide a response to this question.

3.8 As Figure 3.3 shows, 19% had used the website at least weekly over the previous six months and the same proportion had used it once or twice a month. Twenty-eight percent had previously used the website, but only once or twice in the last three months or six months. A third of all respondents were using the Transport Scotland website for the first time.

Figure 3.3: Frequency of use of the website among respondents to the online survey

Q. How often have you used the Transport Scotland website in the last six months?



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

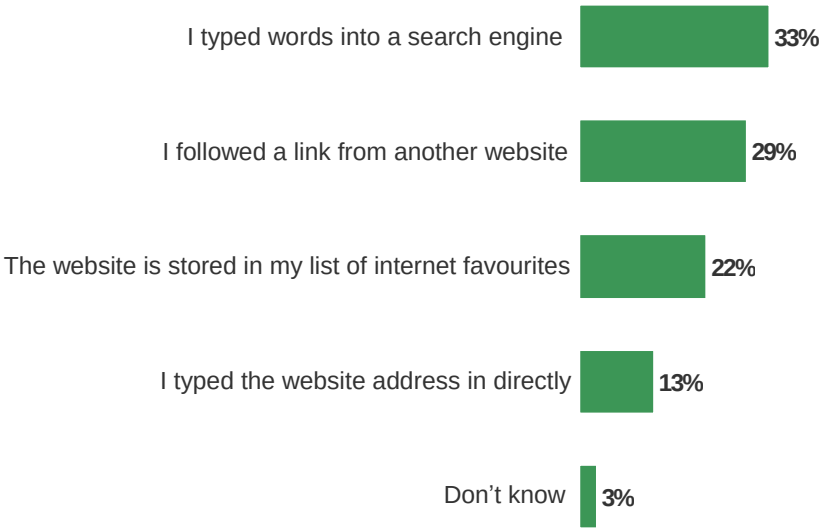
3.9 A third of respondents came to the Transport Scotland website via a search engine (Figure 3.4). Among those who used a search engine, the most commonly used search terms were 'Transport Scotland' (33%), 'Concessionary travel/ free bus passes' (15%), 'M74 Extension' (7%) and 'Upper Forth Crossing' (5%).

3.10 Twenty-nine per cent of respondents followed a link from another website to get to the Transport Scotland site. Among those who followed a link, the most popular ones were from The Scottish Government website (22%), BBC Scotland website (18%) and the Transport Scotland e-newsletter (9%).

3.11 Around one in five (22%) had the Transport Scotland website stored as a favourite and 13% typed the address in directly.

Figure 3.4: Ways used to reach the website among respondents to the online survey

Q. How did you find the Transport Scotland website today?



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

CHAPTER 4: ROLE OF THE HOMEPAGE

- The homepage is arguably the most important page on the Transport Scotland website.
- Stakeholders strongly believed that it was important for the homepage to retain a concise explanation of the remit of the organisation.
- At present, few people read all of the information provided on the homepage and skim read through it at best.
- Stakeholders also feel the website needs to provide a clear route into the main website content and also welcome the provision of latest news headlines.
- The Transport Scotland website currently contains links to a small number of external websites aimed at re-directing those who have arrived in error. Stakeholders agreed these should be retained, or even expanded in any re-design.
- The design of the homepage was in line with expectations, although a small number of stakeholders felt that it was not particularly engaging or welcoming.

Importance of the homepage

4.1 The homepage (Figure 4.1) is arguably the most important page on the Transport Scotland website, as this is the most common entry point for visitors, the most frequently accessed page and the main route into the website content. In the month of August 2008, for example, there were 20,230 unique visitors[12] to the Transport Scotland website and 18,816 of them visited the homepage. Of these, 9,634 visitors entered the website at the homepage[13]. The homepage is also particularly important for first-time visitors who access the website at this point because it is where they form their first impression of the Transport Scotland website.

[12] A unique visitor is defined as a host (computer) that has made at least 1 hit on 1 page in the the reporting period. If this host (computer) makes several visits during this period, it is counted only once.

[13] Visitor statistics for the month of August 2008 taken from the AWstats web statistics for the Transport Scotland website.

Figure 4.1: Transport Scotland homepage

4.2 The homepage should be used to inform visitors about the organisation and guide visitors to the most important content on the website. The principles of good homepage design are straightforward: make the website's purpose clear by explaining what the organisation does and then help users to find the information that they need, through clearly labelled links to the key content.

Users' views on the homepage

4.3 Stakeholders strongly agreed that the Transport Scotland website should continue to provide a concise explanation of the remit of the organisation. Many stakeholders believed that there is a lack of understanding, particularly among the general public, about who is responsible for what areas of transport in Scotland. Indeed, both stakeholders from Local Authorities interviewed, for instance, described how they spent time handling enquiries that were actually in the remit of Transport Scotland.

> *"There is still some room for educating people about what Transport Scotland does as we often receive enquiries that are more for them and the same happens the other way around."*
>
> Local Authority employee

4.4 It was apparent from the usability interviews that few people read the current text on the homepage in any detail. Most of those who participated in the usability sessions scanned the page very quickly, without taking in details. It is important to keep the description of the role of Transport Scotland brief and consider using bulleted lists rather than paragraphs of text to highlight the agency's responsibilities.

"There is a lot going on. Lots of different information which is competing with each other."

Transport / Engineering Consultant

4.5 Stakeholders also agreed that the website needed to provide a clear route into the main website content. Visitors to websites rarely read large amounts of text, but want to click links to explore a website. The navigation needs to recognise and facilitate this, by providing clear links to the content that most visitors will be looking for. Chapter Six will identify the parts of the website that are most commonly accessed by visitors and the information that they looked for. The provision of 'Quick links' to commonly accessed content would be welcomed.

Homepage design

4.6 The homepage design generally met people's expectations, although a small number of stakeholders commented that the website was not particularly engaging or compelling. Indeed, when compared to the Highways Agency website, some felt that the Highways Agency had a homepage that was much more welcoming and engaging, primarily due to the brighter colour scheme used.

"It looks a bit dull. It doesn't make me want to get into it. It is not very enticing at all."

Member of the general public, non-user of the website

External links

4.7 The Transport Scotland homepage currently has some highly visible links to external websites, aimed at re-directing those who have landed on the website in error. Stakeholders agreed that these links should be retained in any new design, because there was an assumption that some people do visit the Transport Scotland website in error, when looking for traffic information or for help in planning a journey. Some stakeholders wondered whether additional links might be useful, such as information on ferries and airports, which are transport-related but fall outside the remit of Transport Scotland. These stakeholders felt that because the agency name sounded all-encompassing, then those searching for information on other modes of transport might visit the site but have no clear direction of where to try instead.

"The term Transport Scotland suggests they manage ferries, they do not. It needs to be very clear about what it does and doesn't cover and provide links to those it doesn't."

Transport / Engineering Consultant

Latest news

4.8 Stakeholders agreed that the website homepage should feature latest news. This is one of the key reasons why stakeholders visit the website and it should be easy for them to find. In addition, providing some content on the homepage that is current and frequently updated ensures that visitors think that the site is up-to-date, which is important in generating trust for the content on the website. As will be reported in Chapter Seven, out-dated content causes visitors to question the validity of all of the information made available on the website, while fresh material provides reassurance.

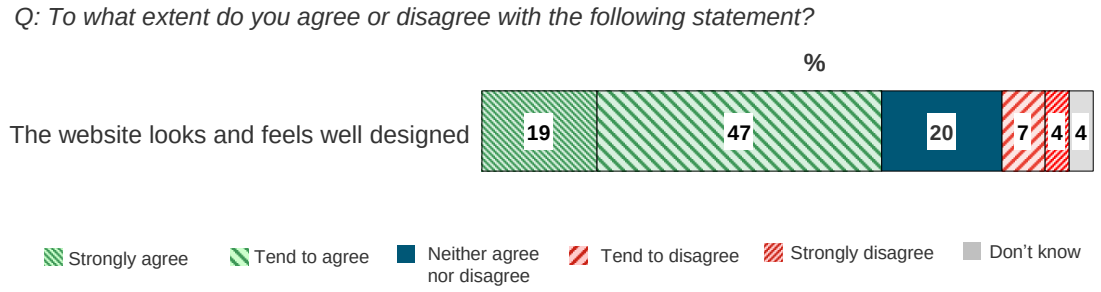
CHAPTER 5: WEBSITE DESIGN

- Most respondents to the online survey consider the website to be well designed, with 66% agreeing with the statement '*the website looks and feels well designed'*.
- Disabled users with visual impairments are likely to face considerable problems when using the website because of poor colour contrast used on the website navigation bars.
- The imagery used on the Transport Scotland website was considered to be both appropriate and helpful in providing an indication about the remit of the organisation. However, there are no images on the homepage which indicate that Transport Scotland manages the national concessionary travel scheme.

Views on the design of the website

5.1 As shown in Figure 5.1, 19% of those who completed the online survey strongly agreed with the statement "the website looks and feels well designed", while 47% tended to agree with this. In contrast, just 10% disagreed with this statement.

Figure 5.1: Views on website design among respondents to the online survey



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

5.2 The colour scheme used on the Transport Scotland website was generally considered to be what was expected of a Government agency. A small number of stakeholders, while in agreement that this was what they had expected, felt that the blue and white colour scheme used was very traditional and showed a lack of originality in design.

Colour contrast

5.3 Disabled users with visual impairments faced considerable problems when completing the set tasks due to the lack of colour contrast on the website. In particular, these users had problems distinguishing the blue font on blue background, the grey font on white background and the white font on blue background. Colour contrast can be checked using a tool on the Web Accessibility Toolbar, which indicates whether the contrast between two colours is sufficient to meet recognised accessibility standards.

Imagery

5.4 The look of a website plays an important part in ensuring a positive user experience. Throughout the Transport Scotland website the images used are considered to be appropriate and help provide an indication of the remit of Transport Scotland. However, the use of a banner image on the homepage, which rotates through a small stock of images, means that at some points only rail related pictures are displayed, which led some stakeholders to comment that some might think that the remit of the organisation is not as wide as it actually is.

> *"The images don't really do justice to what Transport Scotland is about."*
>
> Transport / Engineering Consultant

> *"It gives a clear indication they are involved in railways, but not about anything else. You have to read it to find out. You'd think it was a rail website to a large extent."*
>
> Rail industry interest group representative

5.5 There is no image on the homepage that indicates that Transport Scotland covers the national concessionary travel scheme. As will be reported further in Chapter Six, many first-time visitors to the website come looking for this information and the lack of any imagery to guide them to the 'Concessionary Travel' section may make this information harder to find.

5.6 While the banner image on the homepage is welcoming and helps to indicate what the remit of the organisation is, the banner images on other pages on the website are large and do not actually perform a role, since the page heading is repeated above the page content. Due to the size of the header images and the text heavy nature of many pages, users are forced to scroll down the page to read the text. As evidenced in a small number of the usability testing sessions, not all users do scroll down the page and may miss content as a result. It may be worth removing the banner images to reduce the requirement for users to scroll.

5.7 Where used, it is important to optimise the images for the web as much as possible, to speed up the page download process, particularly for those accessing the website through dial-up connections or using mobile phones or other handheld devices.

Tagging images

5.8 All images should use ALT tag descriptions[14] to accurately and concisely describe them. Visually impaired users accessing the website using screen reading software will only have the ALT tag descriptive information to gauge the importance of a particular image.

5.9 In addition, missing ALT tag descriptions on graphical links and form buttons will impede the usability of the website for users accessing via voice recognition software and for users with cognitive impairments or dyslexia, as software packages they use to assist them will speak the content of the page, including ALT tags describing images and graphical links.

5.10 It is not good practice to use words such as 'picture', 'banner', 'logo' etc in ALT tags and some images on the website do this. All visitors who are not actually able to see that a picture is there are informed of the presence of graphics by their access technology or text browser, so this additional text is superfluous.

5.11 A good way of checking ALT tag is to view a page with images turned off (by unchecking the 'Show pictures' box under the Advanced tab in Internet Options in Internet Explorer) and ensuring the page still makes sense. Displaying content in this way will show the alternative text for the images as end users would encounter it. Further detail on this issue is described in the Accessibility Audit report, in Appendix Six.

[14] ALT tags present text associated with a web page graphic that gets displayed when the user hovers the mouse over the graphic. ALT tags should convey what the graphic is for or about and contain relevant keywords. ALT tags make web pages more accessible to the disabled users. For example, a vision-impaired user may have a web browser that reads aloud the text and ALT tags on a page.

CHAPTER 6: FINDING INFORMATION

- The information required by users of the Transport Scotland website varies substantially across different stakeholders. Meeting the needs of the diverse user base is one of the greatest challenges faced when considering the design and content of the website.

- Among the online survey respondents, 31% of visitors came to the website on the day they completed the survey to look for details of a specific transport project.

- First time visitors to the website were more likely than regular users to look for information on concessionary travel.

- Providing clear, easy to follow links to the most commonly sought information would help users of the website. In particular, recognising that first-time visitors are most likely to be looking for concessionary travel information, it is important to provide an easy to follow link to this part of the website from the homepage.

- Forty-six per cent of those completing the online survey reported finding all of the information they were looking for, with a further 22% finding most of it. However, 26% reported finding only some, or none, or the information they were looking for. Among those who did not find all they were looking for, most sought information that should exist on the website, indicating that some content is difficult to find.

- The primary navigation menu, located above the banner image, is most often used to navigate around the website from the homepage. There was a good understanding about what content would exist under each link, although most users expected to find links to road projects and reports under the 'Road' link and rail projects and reports under the 'Rail' link and many navigated to the wrong part of the website when looking for this sort of information.

- Most users successfully used the secondary navigation menu on the left hand side of the screen to drill further down into the content of each section.

- Just over a third of visitors (37%) had made use of the search tool on the website. Just 8% of those who had used the search tool reported that using it had always led them to find the information they sought. A further 43% said it helped most of the time.

Information needs

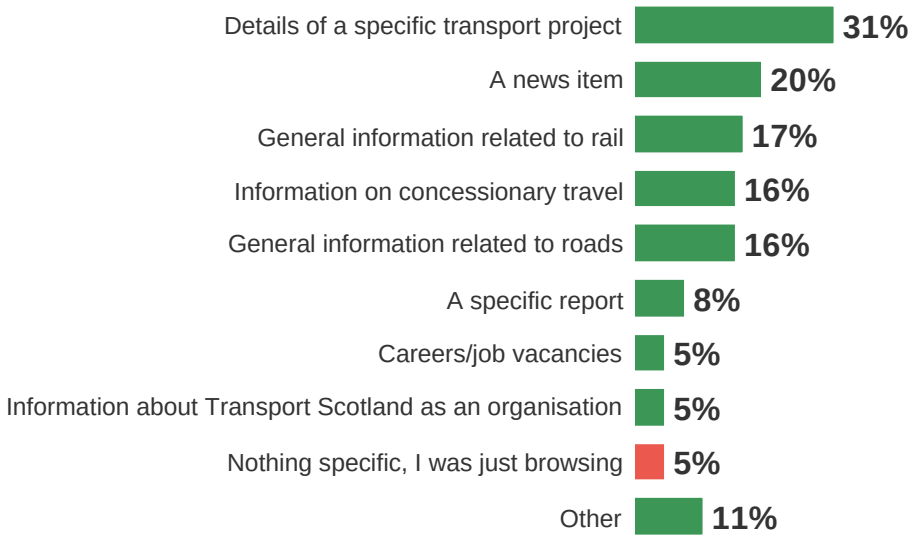
6.1 Information needs among users of the Transport Scotland website varied substantially across the stakeholders, from highly technical and detailed information needed by those working in the transport sector, through summary information on the impact of planned or on-going road and rail projects, to information on concessionary

travel and latest news about Transport Scotland. Meeting the diverse needs of the users is a key challenge in developing the design and content of the Transport Scotland website.

6.2 Among those who completed the online survey, 31% came to the website on the occasion they undertook the survey to find details of a specific project. This is followed by looking for an item of news displayed on the Transport Scotland website (20%) and information related to rail (17%), information on concessionary travel (16%) and general information related to roads (16%) (Figure 6.1).

Figure 6.1: Information sought on day of survey completion among respondents to the online survey

Q. What was it that you came to the website to find today?



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

6.3 Those who had visited the website before were more likely than first-time visitors (37% compared to 20%) to have come to the site the day they completed the online survey to look for information on a specific transport project. On the other hand, first-time visitors were more likely than average to look for information on concessionary travel (31% of first-time visitors do so).

6.4 Encouragingly, the online survey results indicate that visitors were largely successful in navigating to the correct area of the website. Almost all (94%) of those who came to the website to find information on concessionary travel visited that section of the website, while most of those looking for rail information (82%) and road information (73%) found the relevant sections. However, those looking for specific project information were less likely to visit the 'Projects' section of the website, with only 67% saying they did so. Fewer still (46%) of those looking for specific reports stated they visited the 'Reports' section.

6.5 As would be expected, older respondents were more likely than younger visitors to visit the concessionary travel information (40% of those aged over 55 compared to 11% of those aged under 55). First-time users were also more likely to access concessionary travel information (39% of first-time users compared to 11% of frequent / irregular users) indicating that many one-off visitors to the website were looking for concessionary travel information.

6.6 Providing clear, easy to follow links to the most commonly sought information would help most users of the website. In particular, in recognition that first-time visitors are most likely to be looking for concessionary travel information, providing a clear, easy to follow link to this content would be particularly beneficial.

Success in finding information

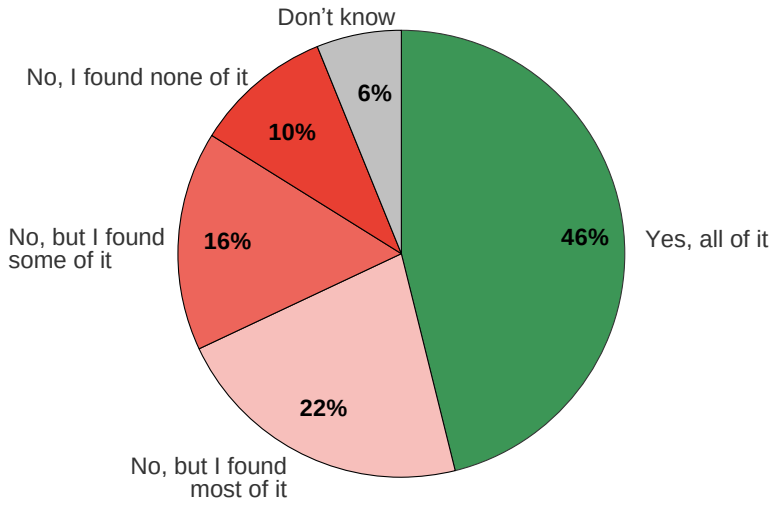
6.7 Visitors report that they are generally successful in finding the information they had come to the website to look for, as shown in Figure 6.2. Forty-six per cent of those completing the online survey found all of the information they were looking for, with a further 22% finding most of it. However, 26% reported that they found only some or none of the information they were looking for.

6.8 Among those completing the online survey who did not find all they were looking for, most were looking for types of information that should be available on the Transport Scotland website. This included road or rail project information; concessionary travel information; more detailed or up-to-date information on the Forth Replacement Crossing, M74 or M80 extensions; specific reports or documents; contact details of Transport Scotland employees; traffic flow information, or job vacancies. The fact that they could not find what they were looking for indicates that some information on the website is difficult to find.

6.9 Fewer of those reporting difficulties in finding information were looking for items that do not exist on the website, for example maps of projects, travel information and information about, or pictures of, new trains.

Figure 6.2: Success in finding information among respondents to the online survey

Q. Did you find all the information that you were looking for today?



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

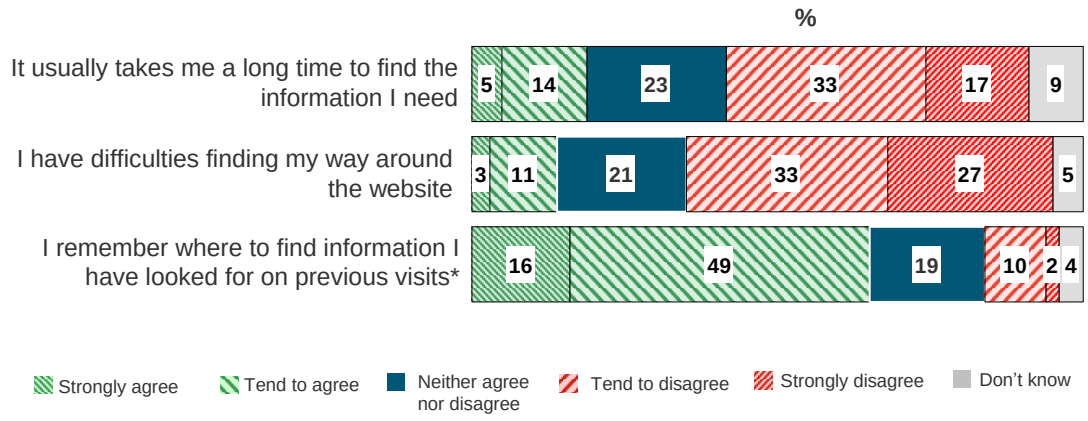
6.10 Given that frequent users of a website are likely to have learnt their way around any major usability barriers on previous visits and may have a better expectation of what information is available on the website, it is unsurprising that those accessing the website at least once a week were more likely than infrequent and first-time visitors to report finding all of the information they came looking for (57% of frequent users versus 45% of infrequent users and 41% of first-time visitors).

6.11 Few of those completing the online survey identified problems with the navigation on the Transport Scotland website, as shown in Figure 6.3. Half disagreed with the statement "It usually takes me a long time to find information" while 60% disagreed with the statement "I have difficulties finding my way around the website".

6.12 Among those who had visited the website previously, 65% agreed with the statement "I remember where to find information I have looked for previously".

Figure 6.3: Views on website navigation among respondents to the online survey

Q: To what extent do you agree or disagree with the following statements?



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

*324 users of the Transport Scotland website who have visited it before (8 July – 26 August 2008)

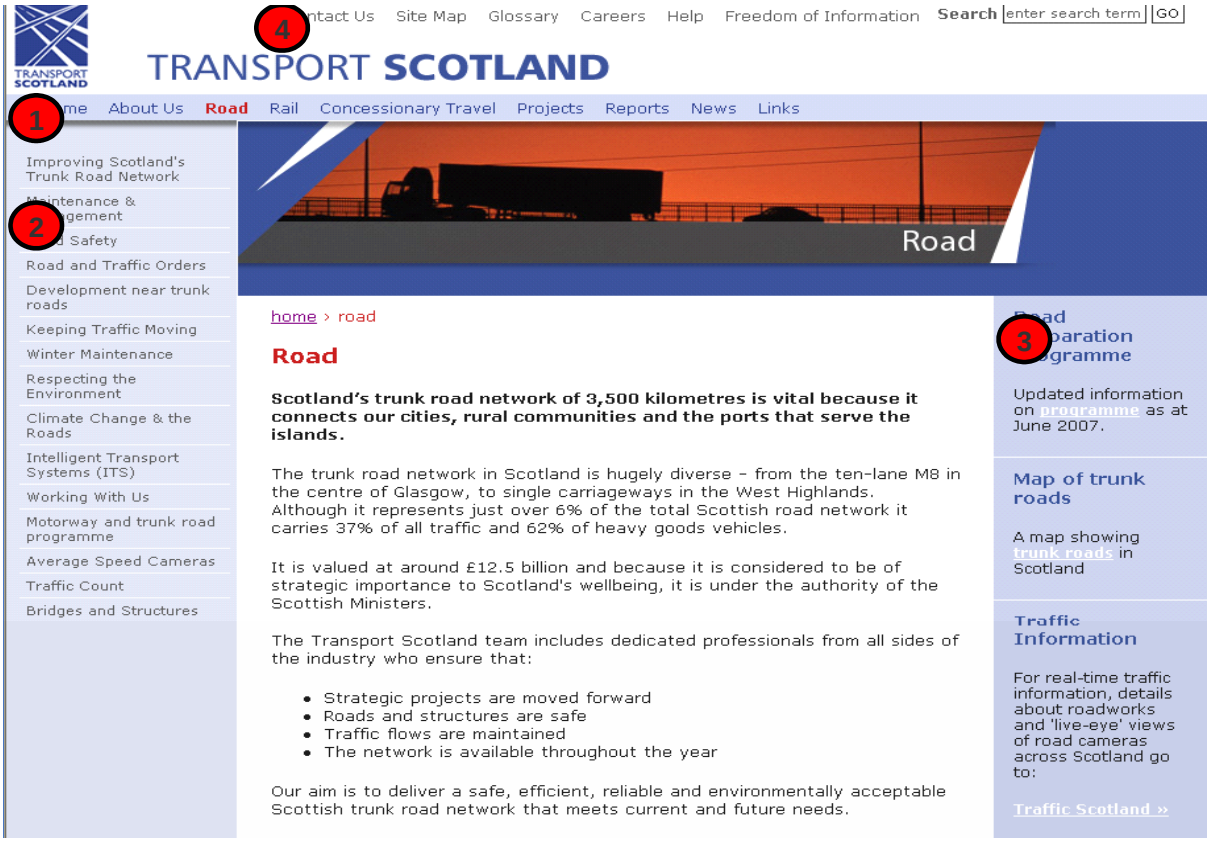
Source: Ipsos MORI

Navigating from the homepage

6.13 The primary navigation menu (see Figure 6.4) located above the banner image is used most often to access the website content from the homepage. However, a small number of users click on links within the text. Some, who are familiar with the website, click the image of the train on the left hand side of the homepage to go directly to the projects index page.

6.14 Many stakeholders commented that the primary navigation menu was not very visible, with users' attention first drawn to the main page content, below the banner image. This problem is exacerbated by the small font size used and the blue font on blue background, which does not offer sufficient contrast. It is possible that those who click links in the text do so because they are unaware of the primary navigation menu's existence. Indeed, some of those who participated in the usability sessions began by ignoring the primary navigation menu and used the links in the text. However, once they noticed the menu they proceeded to use this navigation method instead. To increase the prominence of the primary navigation menu, we recommend it should be repositioned below the banner image and the font size increased to raise its visibility on the website.

Figure 6.4: Navigation menus on the Transport Scotland website



1 – Primary Navigation Menu
2 – Secondary Navigation Menu
3 – Tertiary Navigation Menu
4 – Organisational Menu

6.15 The homepage (Figure 4.1) provides several links to the same page content. For example, the 'Road' landing page[15] can be accessed using the primary navigation menu, a link within the text and from the summary box at the bottom of the page. These multiple links actually confused visitors to the website, who were unclear whether the links went to the same content, or to different pages.

> *"There are links on both sides, down the bottom and the main menu that doesn't stand out that much."*
>
> Transport / Engineering Consultant

> *"There are several routes in to rail information. Which is the best one? You have to try them all."*
>
> Transport / Engineering Consultant

[15] This is the page reached when clicking the 'Road' link in the primary navigation menu www.transportscotland.gov.uk/road

6.16 Reducing the number of links from the homepage will actually make it easier for users to find their way to the content they are looking for, as they are less likely to get confused about where each link goes.

6.17 The links to external websites on the right hand side of the page are prominent and do successfully help to re-direct users who arrive at the Transport Scotland website in error. Several stakeholders recommend broadening the range of external links publicised in this way. In particular, several stakeholders argued that links to other transport providers or major transport projects should be included in the list, because the name, Transport Scotland, indicates that agency's remit might be broader than it actually is. Linking to airports, ferry companies and major projects that Transport Scotland is not involved in, such as the Edinburgh Tram scheme, were suggested.

6.18 The links to external websites are actually more prominent than the primary navigation menu and some users were unclear that they will be leaving the Transport Scotland website when clicking on them. Renaming the 'Links' title 'External Websites' may help to alleviate this issue.

> *"Am I still on the website? I'm not sure. No, I don't think so. This is something different."*
>
> Member of the general public, non-user of the website

The primary navigation menu

6.19 The primary navigation menu at the top of the main page content was the route that most people used to enter the main website content. Generally, there was a high level of understanding about what content would be expected under each of the links, although some duplication was felt to exist. In particular, many stakeholders were unsure of the differences between 'Projects' and 'Reports' and why these sections are separated out from the more general 'Road' and 'Rail' sections.

6.20 This issue was observed many times through the usability tests, with users expecting to find details of road projects under the 'Road' section, particularly as all read across the primary navigation menu from left to right and came to this link first. Having clicked this link, users tried to look for a link to a list of projects and often ended up deep in the 'Road' content, having clicked various sub-menus before giving up.

> *"When looking for information on the upgrading of the M8, I am never sure whether to go into roads or projects."*
>
> Journalist

6.21 This issue could be resolved by reducing the links in the primary navigation menu. If the 'Project' link is removed and instead a link to 'Road' projects and 'Rail' projects is positioned prominently in those sections, users would be less likely to encounter substantial problems while looking for specific project related information.

6.22 Encouragingly, the structure of the website seems to be intuitive and easy to learn. Over the course of the usability tests all users quickly began to understand how

the website was structured and where information was likely to be found. The successful completion of tasks was noticeably higher once users had spent some time using the website. This reiterates the findings from the online survey, which indicated that few visitors experienced serious usability problems, as shown in Figure 6.3.

The secondary navigation menu

6.23 Most users successfully noticed and used the secondary navigation menu on the left hand side of the page to drill further down into the content of each section. However, a minority of stakeholders simply did not see this menu and so failed to find further content within each section. Some of those taking part in the usability and disabled user sessions actually expressed their surprise when they finally noticed, or were made aware of this menu. This was particularly the case, as in the example shown in Figure 6.5, when there were only a small number of links on the secondary navigation menu and none were aligned with the top of the site content. Attention was drawn to the site content and users simply did not appear to notice the links that ended in line with the banner image. The use of grey font on a pale blue background does not provide a great contrast, which reinforced the lack of visibility.

6.24 Aligning the secondary navigation menu with the top of the page content, rather than the top of the banner image will increase its visibility. The colour scheme employed for the secondary menu should be changed, to one that provides greater contrast.

Figure 6.5: 'Reports' landing page

6.25 The number of links in the secondary menu needs to be considered. If the list is too long, users simply scroll quickly down it and may miss the most relevant link. For example, one of the usability tasks was to identify details about Transport Scotland's winter maintenance scheme. Some of those undertaking this tasks successfully navigated to the 'Roads' section landing page, and scanned the secondary navigation menu, but did not see the 'Winter Maintenance' link[16]. Lists with around six to eight links are manageable for users, but longer lists are liable to be skimmed at best.

The tertiary navigation menu

6.26 The tertiary navigation menu on the right hand side of the page was rarely used, except on the homepage. It is generally not considered good practice in website design to provide links to site content on the right hand side of a page. Commonly, websites are designed with a primary navigation menu across the top of the page and a secondary menu on the left hand side and this is what web users have come to expect. In the usability tests, this right hand menu was rarely used. Users largely ignored it and relied mainly on the primary and secondary menus to navigate the website.

6.27 There is no clear purpose to the tertiary navigation menu. Instead, the tertiary menu sometimes contains links to external content, sometimes to internal content and at other times a link to the e-newsletter subscription, for example. Even among those who do see it, this changing role across the site means there is no consistency and so, in consequence, users can not rely upon it for a single purpose.

6.28 Indeed, on those occasions when it was used, it was as a last resort, when users could not find information through the alternative means. An example is when searching for a specific rail project. As described in the primary navigation menu section, many users clicked into the 'Rail' section to find this information and then skimmed the page content and the left-hand navigation for further links to projects. Only when these failed to provide the appropriate link did any users look to the right-hand menu and see the link to the list of projects.

6.29 As described earlier in this chapter, the tertiary menu does provide a useful function on the homepage in directing users to other sites had they arrived at the Transport Scotland website in error. It is visible here and should be retained. Throughout the rest of the website, unless a single purpose can be found, this menu should be removed.

The organisation menu

6.30 This menu, located at the very top of the website provides links to a range of organisational information, such as more about Transport Scotland, careers information and the glossary. This menu was not used by stakeholders, unless specific organisational information was being sought. On these occasions, the menu is positioned where users expected it to be and the content is also as expected.

[16] Further information on how this task was completed can be found in Appendix Four.

6.31 The grey font on a white background makes the menu difficult to distinguish from the background. This is particularly important, as, at present, the site search tool is built into this menu and some were unable to find this easily when looking to search the website. Further information on the search facility can be found later in this chapter.

6.32 When completing a task that required users to find content in this menu[17], most users were able to find the relevant links. Not one stakeholder explored the 'Glossary', or 'Help' facility, despite many commenting that there were a lot of unfamiliar terms employed on the website.

Links

6.33 There is inconsistency in the ways in that links are displayed across the website, which can cause users to be unsure what is a link and what is just page content. Standardising the way in which links are displayed would make it easier for all users to navigate around the website. Following good practice in the portrayal of links, standard text colours should be avoided, links should be underlined and should be a concise summary of the destination. For example, 'Find out who we are and what we do' on the Transport Scotland homepage is a clear link to further information on the organisation.

6.34 As described earlier in this chapter, duplicate links should be avoided. Users are likely to be unsure whether the links will go to the same or different parts of the website. If duplicate links are provided, it is important to ensure that the wording of the links is identical.

6.35 Among respondents to the online survey, the 'Links' section of the website was the least visited part of the website. Just 5% had visited them on the day they completed the survey. Stakeholders expressed surprise at the range of organisations listed in the 'Links' section and did not expect links to non-transport organisations to be made available. Placing links to the Scottish Government and Department for Transport websites at the top of the first page of links meant those participating in the usability sessions were unclear that this section was generally listed alphabetically.

> *"The list of links is fairly random."*
>
> Transport / Engineering Consultant

6.36 A small number of broken links were found during the usability sessions. The broken links identified were to external project sites and placed at the 'Rail projects' page:

- Link to the Larkhall to Milngavie rail project (http://www.spt.co.uk/news/story318.html)
- Link to the Glasgow Airport Rail Link (http://www.spt.co.uk/garl)

[17] A review of how users completed the tasks can be found in Appendix Four.

6.37 Broken links reflect very badly on how a website is perceived and it is very important to either repair or remove these.

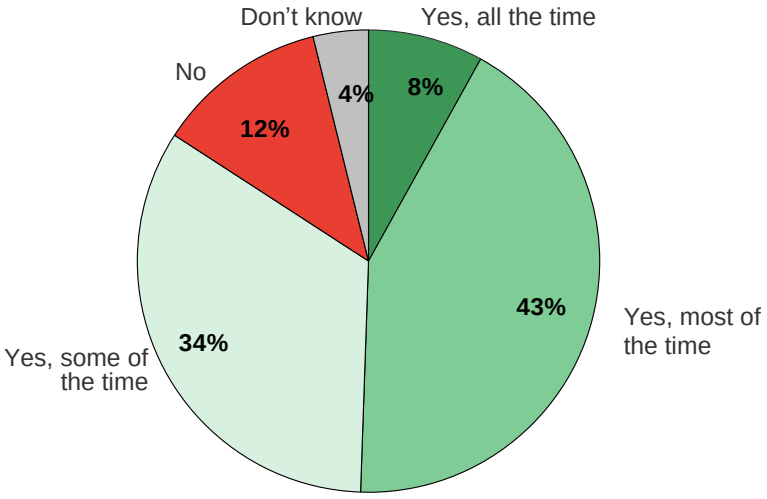
The search tool

6.38 Just over a third of visitors (37%) who completed the online survey had made use of the search tool on the Transport Scotland website. Those working in the transport sector (55%) and the public sector (46%) are more likely to have done so. Those using the website weekly or more often (62%) are more likely than infrequent users (42%) and first-time users (18%) to have used the tool.

6.39 Just 8% reported that the search tool helps them to find all of the information they are looking for, although 43% state that the search helps them most of the time. However, 34% of those who have used the tool say that it helps them only some of the time and 12% say that it does not help them to locate information on the website (Figure 6.6).

Figure 6.6: Success of finding information using the search tool among respondents to the online survey

Q. Does the Transport Scotland website search facility help you to locate the information you are looking for?



Base: 185 users of the Transport Scotland website who have used the search facility (8 July – 26 August 2008)

Source: Ipsos MORI

6.40 Search tools on websites are commonly used as a last resort when there is no clear route to finding information using the navigation links on the website. The usability tests highlighted this, with several taking part in the sessions only using the search tool when they were unable to find information by navigating around the website.

6.41 Indeed, due to its position in the very top right hand of the screen, as part of the organisation menu, some users were actually unable to find the search box easily. The search tool should be relocated into the primary navigation menu to increase its prominence on the website.

6.42 The search tool itself fails to account for spelling mistakes in the searches. If a spelling mistake is made, the tool is likely to bring up no results, or irrelevant results. Providing a more forgiving search tool, which allows for spelling mistakes, based upon the Google design which has become to be seen as the benchmark by which other search tools are judged, will help better direct users to content on the website.

6.43 The content also needs to be referenced in a way that users are likely to search. For example, not all visitors to the site may be aware of the term 'concessionary travel' but might search on more commonly used terms such as 'free bus pass'. At present, searching this term will not bring up links to the concessionary travel information among the top five returns. Since users are very unlikely to scroll beyond the first few results to see if a relevant result has been returned, this search is likely to leave them unable to locate the relevant information. Tagging content using terms that users are likely to search on will help improve the accuracy of search results.

CHAPTER 7: THE WEBSITE CONTENT

- Given the wealth of information available on the website, it is important that the content is written clearly and concisely to ensure it is well understood. Most respondents to the online survey considered this to be the case, with 75% agreeing with the statement "the information is useful to me".

- However, members of the general public and even some transport professionals did not understand the jargon and acronyms used throughout the website. Jargon should be minimised and terms that users are likely to understand should be used. Abbreviation and acronyms should always be expanded the first time they appear on a page.

- This problem is made worse when the jargon, abbreviation or acronym is used as a link to further content because users are unclear what the link leads to.

- A considerable number of respondents to the online survey (27%) felt that some information on the website is out of date. This has a negative impact on the trust that stakeholders have in all of the content provided on the website. Regular auditing of the website to ensure content is updated should take place.

- The main pages of the website were considered to be very text-heavy, particularly those containing information on road, rail and concessionary travel. Users rarely read the text in detail, but instead simply scanned through the words. Stakeholders described how they expected to read a brief summary of basic information with links to more detailed pages.

- All users who successfully navigated to the 'Projects' page identified the eight major project images as links to further content about them. However, users had more problems when searching for a project which was not one of the eight displayed.

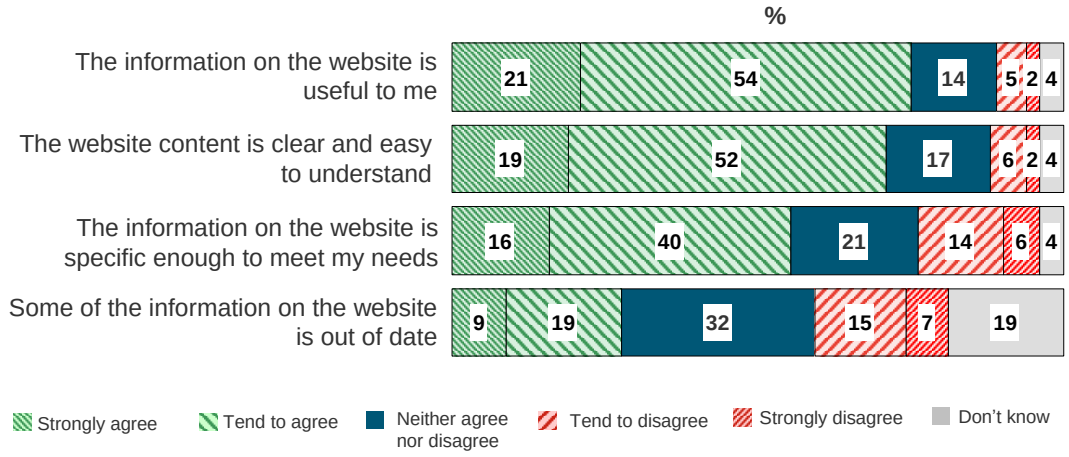
- The level of detail required about projects varies considerably from some basic information about the background to the scheme, the cost, the timetable and the benefits on completion through to very detailed technical information. However, all stakeholders were agreed that the basic information should be made available clearly for each project, with links to the more technical information for those who need it.

7.1 Given the wealth of information available on the Transport Scotland website, it is important that the website content is written clearly and concisely to ensure that it is understood by all visitors to the website. To an extent the website content is already meeting this challenge. Among those who completed the online survey, 75% agreed with the statement "the information is useful to me", while a slightly smaller proportion (71%) agreed that "the website content is clear and easy to understand" (Figure 7.1). 55% agreed with the statement that "the information on the website is specific enough to meet my needs".

7.2 Another important issue in relation to website content is whether it is up to date. As Figure 7.1 shows, a proportion (27%) of respondents to the online survey agreed with the statement "some of the information on the website is out of date". Among frequent visitors to the website, 41% agreed that some information is out-dated. It is very important to ensure that all content on the website is up to date as users will lose confidence in all the material if they find inaccuracies.

Figure 7.1: Views on the website content among respondents to the online survey

Q: To what extent do you agree or disagree with the following statements?



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)

Source: Ipsos MORI

7.3 Issues relating to website content were also explored during the qualitative part of the research (the usability and accessibility interviews and the stakeholder discussions) and overall stakeholders were satisfied with the existing content. However, when probed further on their perception about specific pages, a number of issues were identified. These findings are presented in the remainder of the chapter.

Use of jargon, abbreviations and acronyms

7.4 Generally, members of the general public did not understand the jargon and acronyms used throughout the website and this gave them the impression that the website was mainly aimed at professionals working in the transport sector. However, a number of transport professionals and key stakeholders also experienced this. Examples of jargon that were not widely understood include: 'Voluntary Purchase Information for Promoters', 'Service Quality Incentive Regime' and 'Scottish Transport Analysis Guide'. Meanwhile, examples of abbreviations and acronyms that were not widely recognised are the 'AWPR Project' (Aberdeen Western Peripheral Route) and the 'SAK Project' (Stirling-Alloa-Kincardine) both found on the 'Projects' landing page. The use of jargon should be minimised and terms that users might be likely to be looking for should be used. For example, "concessionary travel" could be replaced with "free bus travel". Abbreviation and acronyms should always be expanded when they first appear so that they are understood by all users.

"What does SAK mean?"

Member of the general public, non-user of the website

7.5 This problem is made worse by the fact that the above examples serve as links further into the website. Where the use of jargon or acronyms is unavoidable, these should not be used as titles for links. Users should always be given a clear indication of the type of information provided by the link.

7.6 With regard to the acronyms used in the 'Projects' landing page, users had to click on these in order to find out what project these refer to. Users said this could be frustrating when their internet connection is slow.

7.7 As reported in Chapter Six, none of those participating in the usability sessions looked at the 'Glossary'. The content needs to be written based upon the assumption that users, rarely, if ever, will look up terms in the 'Glossary'.

'Road' and 'Rail' landing pages

7.8 All stakeholders considered these pages to be very text heavy. Across the usability sessions, transport professionals and members of the general public only scanned this content and very few read these pages in detail. Rather than long pages of text, stakeholders described how they expected to be able to read a brief summary of basic road or rail information on these pages and be able to link through to find details of current and planned projects. Those taking part in the usability and key stakeholder interviews described how they expected these landing pages to contain key details about Transport Scotland's role in the trunk road and rail sectors and then provide links to more detailed technical information, to be explored by those who needed greater detail.

7.9 Those participating in the usability tests all looked at the six secondary navigation links on the rail landing page, although two users did not notice them immediately, as they scanned across from the page content, rather than above it. While understanding of most of the links was good, most expected the 'Improving Railways' link to lead to a list of rail projects, while only a minority of transport professionals understood the term 'Service Quality Incentive Regime', with most unaware of what this might be. Amending this link to 'Rail Performance Statistics', or similar, will help visitors better understand what information this leads to.

7.10 The lack of visibility of the tertiary navigation menu was also apparent from the 'Rail' landing page. Although several users visited this page looking for a link to the projects, their attention was drawn to the content on the page and the secondary navigation menu. As a consequence, very few users noticed the link to rail projects available from the tertiary menu.

7.11 All of the participants in the usability interviews among the general public and stakeholders identified the list of links from the 'Road' landing page. However, the sheer number of links meant few looked at them in detail and instead simply skimmed through the list. As described further in Appendix Four, this led several users to miss the link to the winter maintenance programme, despite them looking in the correct

place for the link to this. Reducing the number of links in the secondary navigation menu will help users to locate the most important links.

'Concessionary Travel' landing page

7.12 Those participating in the usability interviews commented that this was a text heavy page. From observation of the actions of the participants, it is clear that few read the content of the page in any detail.

7.13 The page layout means that the visible content when the page is initially viewed ends just before the section on 'Young Person's Concessionary Travel'. Those visiting the website need to scroll down the page to read this information. The page looks as though there may be no more content other than that displayed and observation from the usability testing identified that not all visitors did scroll to read further information. This issue is particularly important because there is no information available about the young persons' scheme available after selecting the 'Who qualifies?' link. It is possible that those looking for information on concessionary travel for young people may browse the website and not be made aware of the relevant content. Information on the Young Persons Concessionary Travel scheme should be made available under the 'Who qualifies?' link.

7.14 There was very good understanding of what information would be made available under the links available from the secondary navigation menu. Users most commonly selected the 'Who qualifies?' link for further information.

'Projects' section

7.15 Following the usability and stakeholder interviews it was clear that users often struggled to navigate to the 'Project' section of the website, since initially they expected to find links to road and rail projects under the links for 'Road' and 'Rail'. In the usability sessions, those who had never visited the Transport Scotland website before, instinctively clicked those links first, before trying 'Projects'. Eventually, almost all users did arrive at the 'Projects' landing page.

7.16 On that page, users' attention was strongly drawn to the eight images, which were correctly identified by almost all users as the key projects that Transport Scotland is involved with. In the usability sessions, if a user was looking for information on one of these eight projects, all clicked on the image and, correctly, expected to be linked through to further information.

7.17 Participants in the usability sessions displayed more problems when searching for a project that was not one of the eight major ones. A small number initially did not notice the panels providing a dropdown menu to access the trunk road projects, or the link to all of the rail projects and two resorted to using the search option at this point. All of the other usability participants did find these panels, with varying degrees of ease.

7.18 Those who had been asked to locate a rail project clicked the link and were able to scroll through the list of rail projects to find the one of interest. Several mentioned that the list of rail projects did not look to have been presented in any particular way and had expected a listing in alphabetical order. All users were able to click through into the rail project page, from the list of projects.

7.19 Further problems were displayed in the usability sessions when users were searching for road projects that were not associated with one of the eight images. Having found the panel, all users successfully used the dropdown menu to locate the project of interest. All found the listing by road number appropriate, and an easy way to search the long list. However, several commented that they would have expected the motorway projects to be listed above the trunk roads. Having highlighted the road project, most users did click the 'Go' button. However, several did not do so immediately and expected to be automatically taken to the project page. When this did not happen, all eventually noticed the button and clicked on it to progress. Providing a consistent drop down menu approach for both road and rail projects would enable those searching for a rail project to be able to link directly to the project of interest, rather than having to visit an additional information page.

7.20 The information required about projects varies considerably between the different website users. This varies from information at a basic level, such as background to the project, any expected impact on local residents and the completion date, which members of the general public would be interested in, through to very detailed planning and legal information required by transport professionals. Catering for these diverse needs on the one website is a challenge. Those participating in the usability tests expressed some surprise when re-directed from the Transport Scotland website to a project specific microsite[18] on another website, such as the Aberdeen Western Peripheral Route (www.awpr.co.uk). Keeping projects within the design style of the Transport Scotland website would minimise user confusion.

7.21 The eight major project pages are full of text, which those participating in the usability tests did not read through in any detail. Users frequently missed links in the text that would lead them to completing the tasks set because they did not read the page content in sufficient detail. Similarly, few users spent time reading the links in the secondary navigation menu and often missed links that would have led to information they were looking for.

7.22 There is a lack of consistency in the links provided in the secondary navigation menu, which means users are unable to 'learn' where information will be across different projects. Producing a standard list of navigational links within the projects will help users to find specific project information.

7.23 There is an expectation from across all stakeholders that the project pages should summarise key information and provide links through to more detailed and technical data. Providing a summary box for all projects, including key information

[18] A microsite is a term describing an individual webpage or cluster of pages which are meant to function as an auxiliary supplement to a primary website. The microsite's main landing page is likely to have its own website address.

such as the background to the project, what the planned improvements will bring, the cost of the works, the timetable and progress against key milestones, and the potential disruption to local travel that might occur, will meet expectations. Indeed, a summary box containing these sorts of details is available for all local trunk road projects, but does not exist for the major projects.

7.24 Specifically, members of the general public and stakeholders conducting the usability interviews were asked to find where on the website the Strategic Transport Projects Review information was located, in order to understand if this was in an appropriate place on the website. These users were in agreement that its current position seemed to be appropriate and that there was nowhere on the website that would be more suitable.

Programme document

7.25 The programme document is a regular publication produced by Transport Scotland to provide an update on progress of the roads preparation programme. One of the tasks (Task One) designed for those testing the usability of the site required the programme document to be accessed. As outlined in the Task Review in Appendix Four, this proved difficult to access. However, the document itself caused a number of problems for users trying to understand it. Initially, several stakeholders commented that the document was dated June 2007, some fourteen months before the research took place.

7.26 This led to distrust in the information provided, since it appeared to be long out of date. Furthermore, stakeholders commented that if information appears out of date on one part of the website, it calls into question the reliability of all of the content across the website more widely. It is important to regularly audit the website to ensure that content is kept updated. Even if the information has not changed, for example, if the programme document is still the latest version, updating a new document regularly, with a more recent date, will avoid user concerns.

7.27 Further usability problems were observed during the testing sessions. The document spread over two pages, but this was not obvious. The information being sought was on the second page, but several users simply scrolled to the bottom of the first page and announced they felt the information did not exist. Better sign-posting of the second page of documents by putting "Page one of two" underneath the table is likely to reduce the likelihood of this happening.

7.28 The definitions of the letters used for the cost bands are not defined on page one. Users have to guess what the letters mean, unless they scroll to the bottom of the second page. Including the definition of the letters in the column headings would alleviate this issue.

7.29 For those users who did find the second page, because the column headings are not repeated at the top of the page, they constantly needed to scroll back to the top of page one to remember what each column showed. Repeating the column heading would remove the requirement to do this.

7.30 Finally, users expected to be able to click on the 'Scheme Name' to be taken to the specific project page.

'Reports' section

7.31 Reports are widely used by transport professionals and those working in the public sector. Those participating in the usability sessions were able to successfully navigate to the reports section, although there was a widespread expectation that after selecting the 'Reports' link in the primary navigation menu, users would be presented with a list of all the reports available, and not have to click further into the website. Indeed, some users were stuck for some time on the 'Reports' landing page, as they could not see how to progress, with the three links in the secondary navigation menu not visible to them, as they were aligned with the image at the top of the page and not with the content that the users were looking at.

7.32 There was a lack of understanding of the three links in the secondary navigation menu, which caused problems for stakeholders. Few understood the difference between 'Consultation Papers and Responses' and 'Publications and Guidelines' and so were unsure which to click into when looking for documents. Merging these two sections into one will remove this challenge for website visitors. Several stakeholders commented that they expected the links to be on the page, rather than in the secondary navigation menu.

7.33 Among non-transport professionals, there was no understanding of the term Scot-TAG[19] and using a non-technical term to explain where this links to would be helpful.

7.34 The reports themselves are generally considered to be well-written by those who have read them. They are a valuable resource for detailed information. Many professional users want to be able to print off the documents to read or refer to later and several commented that because PDF versions were not always available this was not easy to do, with pages needing to be printed individually. We would recommend that a PDF version of each document is made available, with appropriate labelling to meet accessibility requirements.

> *"All the reports appear to be webpages, rather than a PDF. You can save a copy of a PDF and they allow you to search on a keyword."*
>
> Transport / Engineering Consultant

[19] Scot-TAG is Transport Scotland's web based information source for transport analysis guidance. Scot-TAG, which is an acronym for **Scot**tish **T**ransport **A**nalysis **G**uide, is intended to provide transport practitioners working on Scottish based transport projects, or any other interested party, with access to the latest information and guidance that they will need when developing and assessing transport schemes and strategies.

'News' section

7.35 The news section of the website met expectations of users, by providing links to the latest news stories and an archive of older articles, searchable by date. The number of news stories displayed during the period of this research was never high, so it was easy for those participating in the usability sessions to read through them easily.

7.36 A small number of stakeholders commented that by listing only stories posted to the website in the current month, there were sometimes few articles listed. This might mean visitors to this section of the website could perceive that there is little going on in the agency. Some suggested that posting the last five news articles would help overcome this.

7.37 All of those participating in the usability sessions were able to click on the link to read the news story and to successfully navigate the archive to find historical stories.

The e-newsletter subscription form

7.38 The usability of the e-newsletter subscription form was tested through the usability and disabled-user testing[20]. Although users did not experience any major difficulties when asked to complete the form, a few questioned why they had to include their gender and date of birth when subscribing to a newsletter, while others were unsure which fields were mandatory. Unless the gender, date of birth and address information collected is being used for specific purposes in relation to the newsletter, we suggest removing these fields. Otherwise, the inclusion of these fields, even though not mandatory, will serve to deter users who are uncomfortable with providing such details on the internet from signing up.

7.39 Both the error message, which appears if the form has not been filled in correctly, and the message confirming the subscription, use the same formatting of black font on a red background. The use of red which is usually associated with an error, led some users to think they had made a mistake in completing the form, when they had actually successfully subscribed. Red should be used to signify an error, perhaps combined with a warning symbol to aid those who have problems with colour-blindness. The successfully subscribed message should be altered to use another colour.

7.40 The address finder does not appear to work. An error message 'Fields marked with a * are mandatory" is displayed, despite the form being completed correctly. Furthermore, when the postcode finder is used, not only does it not work, but the page refreshes and deletes the details already entered into the form. We would recommend removing the postcode functionality if it is proven not to work.

7.41 Few stakeholders understood the terms 'html' and 'text' options presented to them on the email newsletter subscription form, nor did they use the 'Preview' links provided which seeks to illustrate differences between the two options. This was not a barrier to successful subscription, as most accepted the default selected. Adding a short

[20] See Chapter Ten for interest among stakeholders for the e-newsletter

explanation for why visitors should choose either option, might help users here. For example, 'suitable for those with slow internet connections and for reading the newsletter on a PDA' can be added next to the 'Text' option.

7.42 An issue for those with visual impairments accessing the website using screen magnification software is that because labels of the text entry boxes were aligned to the left rather than to the right they could not read the label and see the text entry box at the same time. The gap between them meant that they had to scroll back and forth to ensure that they were inputting the correct information in each box, causing frustration and increasing the likelihood of entering information in the wrong box. Re-aligning the labels to the right of the field boxes will improve the accessibility of the subscription form.

7.43 Although no stakeholder accessed the form from the link at the bottom of the page, we would recommend that this link should direct users straight to the form, rather than to a landing page. The short message on the page is aimed at inducing users to sign up to one of the e-newsletters, but individuals have already decided to subscribe, therefore this message is irrelevant to them.

CHAPTER 8: INTEREST IN WEBSITE FEATURES

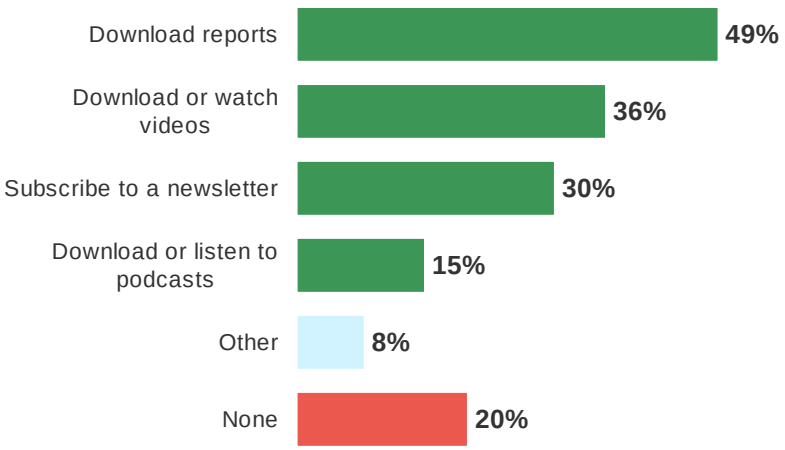
- Respondents to the online survey were presented with a list of different website functions and asked to indicate whether this is something they would like to do when using the Transport Scotland website. The most popular functions were downloading reports (49%), downloading or watching videos (36%) and subscribing to an email newsletter (30%).
- Stakeholders said that project videos containing background project information and updates on how the project was progressing would be most interesting.
- Among the stakeholders, many were unaware that the option to subscribe to an email newsletter already existed. Positioning the link more prominently on the website should publicise this more.
- The qualitative work also explored interest in an interactive mapping tool to enable users to search for projects. This was widely welcomed, allowing a regional search to be implemented more easily than at present.
- The qualitative research also looked at interest in personalising the content of the Transport Scotland homepage. Views were mixed, with some saying they would take the time to do so, to filter out information outside the region or mode of transport they were interested in.

8.1 Websites can be enhanced by providing content in alternative formats to text on a webpage and by adding interactive features onto the website. Currently the Transport Scotland website allows users to download reports as well as subscribe to a number of e-mail newsletters. Such enhancements are only of value if there is an interest for these among website users. This study looked at the level of interest in these existing features, as well as interest in new enhancements, namely: video content, audio content, an interactive map of projects and the ability to personalise the homepage.

8.2 Respondents to the online survey were presented with a list of different enhancements and asked to indicate whether each is something they would like to be able to do when using the Transport Scotland website. As Figure 8.1 shows, 49% of respondents stated that they would like to be able to download reports, 36% stated that they would like to be able to download or watch videos while 30% said they would like to subscribe to an e-mail newsletter. Only 15% answered that they would be interested in downloading or listening to podcasts. It is also worth noting that a proportion (20%) stated that they were not interested in any of these features.

Figure 8.1: Interest in website features among respondents to the online survey

Q. Which of the following, if any, would you like to be able to do using the Transport Scotland website?



Base: 496 users of the Transport Scotland website (8 July – 26 August 2008)
Note to figure: Percentages do not add up to 100 due to multiple answers

Downloading reports

8.3 Analysis of these findings by sector of employment shows that respondents working in the transport sector were more likely than average to select the download reports option (68% versus 49% overall), highlighting the importance of the reports for transport professionals.

8.4 This finding is reinforced by the results from the qualitative interviews among transport professionals, who all indicated that they had downloaded reports from the website. The Scottish Transport Appraisal Guidance (STAG) was commonly cited as a report these professionals had viewed.

Download videos or watching videos relating to transport projects or issues

8.5 The video content option was more likely than average to be selected by respondents who visited the website to look for news information (56% versus 36% overall) and by those who looked for project information (43% versus 36% overall).

8.6 Consistent with the findings from the online survey, stakeholders broadly welcomed the addition of videos to the website and felt that these would be most appropriate for news and project information.

> *"Where they add value in providing information in a digestible way - that is fine. I don't want to be told what a wonderful organisation they are. It should be project specific and where there is a major public interest."*
>
> Scottish Government employee

8.7 These users felt that the content of the videos could include background project information, updates on how the project is progressing and opening ceremonies. When asked what style these videos should take, participants indicated that they should be presented in news reporting style.

> *"I think this would be really good. I would expect it to tell me the same thing I could read myself, but in video form. Someone telling you the information."*
>
> Member of the general public, non-user of the website

> *"This would be a good development. It would be good to have these done in the style of BBC reporters. It would be good to include these on a local report archive which people could use to put together a history of the programme."*
>
> Local Authority employee

8.8 Members of the public, key stakeholders and transport professionals were also asked about the value of a webcam placed on the Transport Scotland website which would show how projects are progressing. Again, this was broadly welcomed as users felt this would enable them to see exactly at what stage a project is.

8.9 Some users stressed that providing video content should not compromise the speed at which the website loads, as this can cause frustration. Additionally, a number of key stakeholders felt that these videos would be more of interest to members of the public and noted that videos should only be added as an additional option to text. These key stakeholders preferred text for their professional information needs.

8.10 Thus, we recommend that if video or webcam content is to be developed then these should be project specific and news oriented, without compromising either the speed of the website or the availability of text-based information.

The e-newsletter

8.11 Sub-group analysis of the findings from the online survey showed that frequent users are more likely than average to state that they would like to subscribe to an e-mail newsletter (42% versus 30% overall).

8.12 Among the key stakeholders and transport professionals interviewed, few currently subscribe to any of the newsletters available, though there was considerable interest in this feature.

8.13 Many were unaware that the opportunity to do so already existed, although one respondent had said he had subscribed but could not recall ever receiving a copy of the newsletter.

> *"I have signed-up to receive newsletters, but I don't seem to get them. I even re-subscribed as I thought I must have completed the form wrongly. I would expect a monthly or quarterly newsletter."*
>
> Rail industry interest group representative

8.14 The link to the newsletter subscription form should be placed more prominently within the Transport Scotland website. Currently it is placed at the bottom of each page along with links to copyright and website accessibility information and it is clear from the interviews that few have noticed it there. A link to the newsletter on the homepage and prominent links in the relevant parts of the website should be considered.

Download or listen to podcasts relating to transport projects or issues

8.15 Turning to audio content, respondents who looked for news information on the website were more likely than average to answer that they would like to be able to download or listen to podcasts (29% versus 15% overall).

8.16 Users and key stakeholders interviewed in the qualitative fieldwork were sceptical when asked about the value of podcasts relating to transport issues. Some indicated that they would not listen to them as they prefer text, while others were unsure of what additional value these would add to the information.

> *"I don't know how many people would download it. I might listen to it on the website. You could have a library of discussions, or parliamentary debates or something. I might listen if it was close to my heart."*
>
> Member of the general public, previous user of the website

8.17 Those who did say that they would be interested in listening to podcasts, felt that these should be news and project oriented.

8.18 Taking these findings together we therefore recommend that resources would be better directed towards enhancing the website with the more popular features such as video content and the interactive map discussed below.

Interactive map

8.19 In addition to the features explored in the online survey, participants in the qualitative research were asked to consider whether they would be interested in an interactive map that would enable them to search for projects. This was widely welcomed, as users noted that this would allow them to view all the projects in a specific region, including the smaller local projects. A map was also seen as more user-friendly than the current list of all projects that users have to scroll through.

8.20 Some users regarded the interactive map on the Highways Agency website as a good example. The map was praised for its simplicity and its use of bright and attractive colours.

8.21 Users did not feel that there was a need for a single map to be produced and instead a map for rail projects and separate map for road projects was seen as acceptable. It was also noted that these maps should allow users to see existing as well as upcoming projects.

8.22 Given the advantages of a map identified by users and its positive reception, we would recommend this tool is developed with the Highways Agency tool used as a template.

Personalising the homepage

8.23 Lastly, the qualitative research explored users' views on a functionality that would enable them to personalise the contents of the Transport Scotland homepage. This means that each user would be able to customise what is displayed on the Transport Scotland homepage based on their individual interest. An example of this functionality can be found on the BBC homepage (www.bbc.co.uk).

8.24 Views were fairly mixed with regard to personalisation. Users who indicated that they would spend a few moments to personalise their homepage would do so by either location or project type.

> *"I would do it. Location and topic seems the obvious ones, but by date as well, so you could cut out anything that was out of date."*
>
> *Transport / Engineering Consultant*

8.25 On the other hand, some users stated that they require an overview of everything that is going on in Transport Scotland and therefore would not be interested in this function.

8.26 We would recommend that the option to personalise the homepage should be provided, as the frequent users of the website interviewed tended to visit the website for very specific information and expressed an interest in being able to personalise content to better meet their needs. The default homepage should remain broad based in order to satisfy the needs of those who need an overview of Transport Scotland.

CHAPTER 9: COMPARISONS WITH OTHER GOVERNMENTAL WEBSITES

- Transport Scotland strives to have a website at least as good as those of other governmental agencies and transport organisations. As part of the qualitative work, participants were asked for their impressions of three other websites: the Scottish Government; the Highways Agency and the Department for Transport.

- Users held mixed views of the Scottish Government website, with regular users being more positive towards it. Regular users felt the homepage provided access to a lot of the content and the transport pages themselves were liked as they were considered better-designed, easier to use and more comprehensive than the Transport Scotland website. Less frequent visitors to the Scottish Government were overwhelmed by the information on the homepage and the sheer number of links made available.

- The Highways Agency website was positively perceived. Users liked the colour scheme employed and felt this made the website look enticing, in contrast to the Transport Scotland website. Users also pointed out that the provision of the current date and the rolling traffic information on the homepage gave the perception that the website was up to date. Users also liked the interactive mapping tool, allowing a regional search for road projects. However, many users commented that the homepage was very busy with lots of things competing for attention, which made it unclear where the most important links were.

- The Department for Transport website was the most positively received. Users felt the colour scheme was welcoming and that the four main links into the content were very clear. Transport professionals also praised the cross-referencing in the 'Reports' section of the website, where related internal and external links are made available.

9.1 Transport Scotland strives to have a website at least as good as those of other governmental agencies and in particular of other transport agencies. To this end, as part of the usability sessions and depth interviews with key stakeholders, participants were asked for their impressions of other governmental websites. The websites chosen were those of: the Scottish Government (www.scotland.gov.uk), the Highways Agency (www.highways.gov.uk) and the Department for Transport (www.dft.gov.uk), providing a mix of public sector and other transport related bodies.

9.2 It is important to bear in mind that participants were only asked to spend a short period of time reviewing and discussing other governmental websites, and were not asked to undertake any tasks on them. Consequently this section primarily comprises top of mind findings on design, style and homepage content. However, some transport professionals and key stakeholders had used these websites previously and therefore were able to comment on more specific issues.

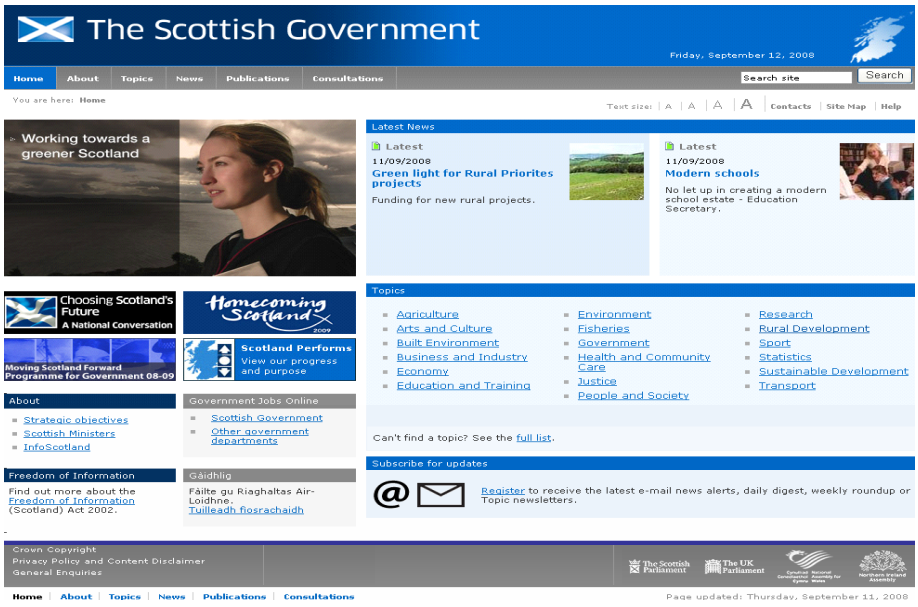
Scottish Government website

9.3 Users were divided when asked about their perceptions of the Scottish Government website (Figure 9.1), with regular users of the website having more positive views. Regular users felt that the homepage was better designed than that of the Transport Scotland website, as it provided access to a lot of content. The transport pages of the Scottish Government website were also liked by transport professionals and key stakeholders, as they felt these were better-designed, easier to use and more comprehensive. However, these stakeholders also acknowledged that their positive perceptions might be influenced by their familiarity with the website.

> *"Navigation-wise the Scottish Government website is better but that might be because I know it better"*
>
> Scottish Government employee

> *"For transport you can immediately find publications"*
>
> Transport / Engineering Consultant

Figure 9.1: Scottish Government homepage



9.4 On the other hand, less frequent users were overwhelmed by the amount of information available on the website and the number of links available from the homepage. Users felt that there were too many areas competing for their attention, because each link on the homepage is given equal prominence. As a result they were unsure where to click in order to locate the information they are looking for.

> *"It is difficult to find information on here [Scottish Government website]. I tend to be looking for very specific transport information on parliamentary bills etc but it is not easy to find"*
>
> Transport / Engineering Consultant

Highways Agency website

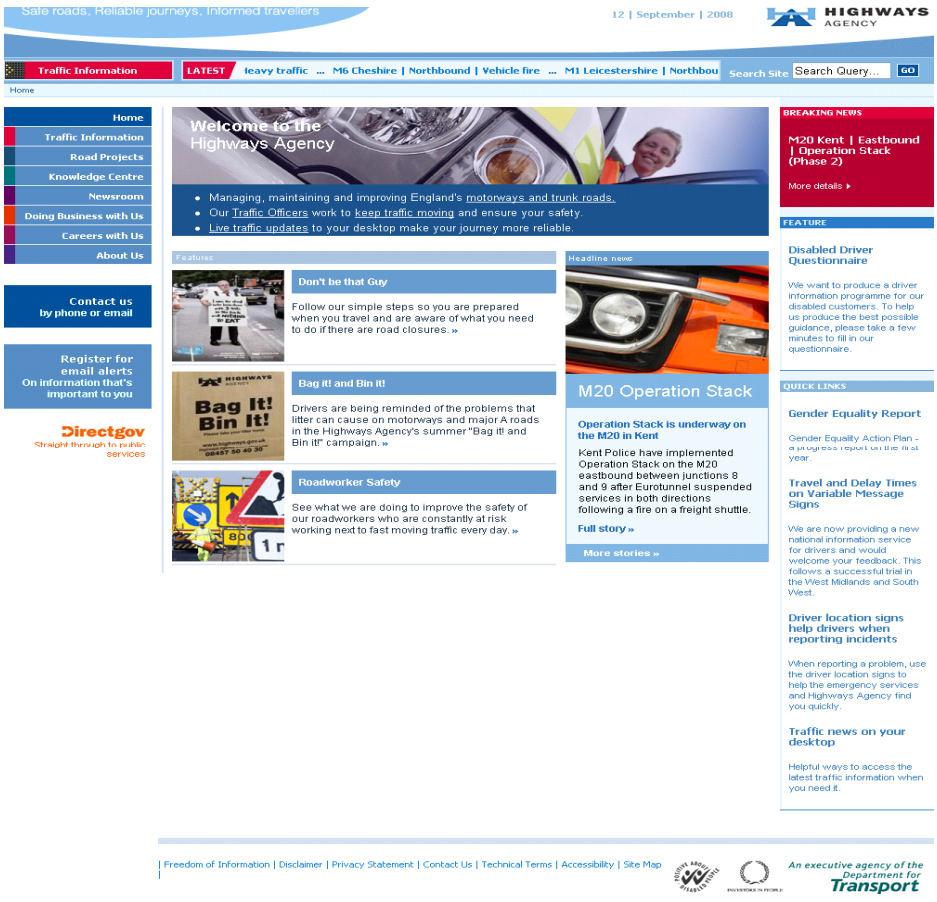
9.5 Overall, users who were shown the Highways Agency website (Figure 9.2) had positive perceptions of it. These users liked the colour scheme used and noted that it made the website look enticing.

> *"This is more eye-catching. Still blue and white, but a bit more colour"*
> Member of the general public, non-user of the website

9.6 They also felt that the website was up-to-date as the current date is provided at the top right hand corner of each webpage. The latest traffic information provided on the homepage also fostered the perception that the website was up to date.

> *"You see today's date on the website and you get the impression it is up to date. Same with the rolling traffic information"*
> Transport / Engineering Consultant

Figure 9.2: Highways Agency homepage



9.7 Furthermore, users praised the map tool that allows visitors to the site to search road projects by region.

9.8 Negative comments users made related to the large amount of links available on the homepage which meant the page appeared to be very busy and users were unclear

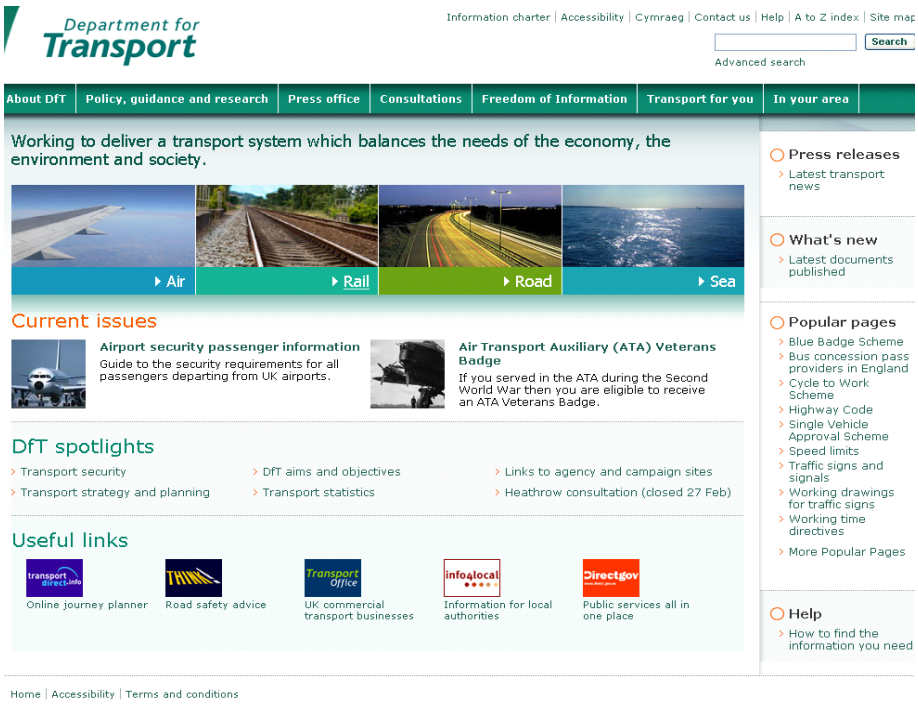
where the most important links were and the use of transport industry jargon in the roads projects pages.

> *"Located in Area 7. That means nothing to me. Nor does Scheme Type – Other."*
>
> Transport / Engineering Consultant

Department for Transport website

9.9 Of all the websites users were asked about, the Department of Transport website (Figure 9.3) received the most favourable comments. Again, users mentioned that the colour scheme was enticing. They also liked the four main links - 'Air', 'Rail', 'Road' and 'Sea' - into the website content from the homepage. Each link has a picture representing the transport mode and they are larger than the rest of the links on the page thus drawing visitors' attention to them. Other features that users praised were the 'What's new' and 'Press releases' links that are placed on navigation menu on the right of the homepage.

Figure 9.3: Department for Transport homepage



9.10 Transport professionals also praised the cross referencing in the 'Reports' section: the navigation menu on the right providing relevant links, external and internal, for the report a user is viewing. Users considered the website to be both comprehensive and easy to use.

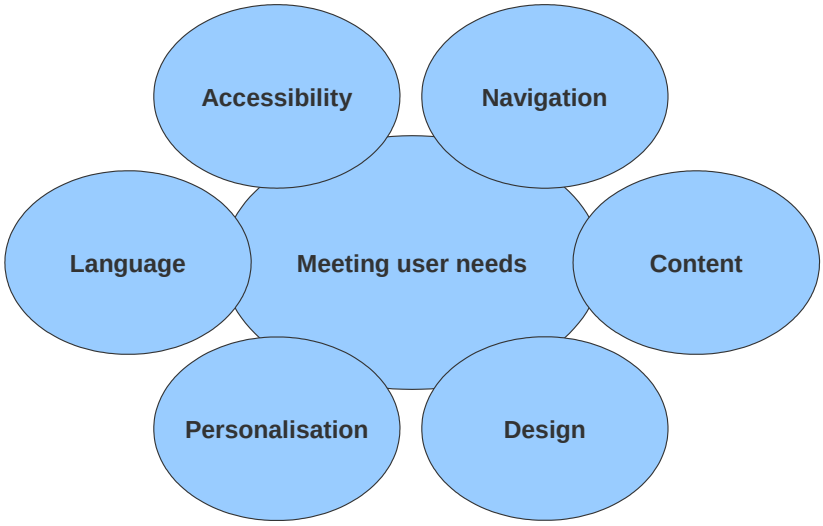
> *"This website is pretty good. It is up to date and very comprehensive. It has got a good archive and it is easy to find some obscure documents."*
>
> Transport Scotland employee

9.11 Negative comments made about this site were the lack of contact details for individuals within the organisations and the lack of a navigation menu on the left, which confused several stakeholders.

CHAPTER 10: CONCLUSIONS

10.1 Website design presents a considerable challenge, with the needs of visitors covering a range of different areas, shown in Figure 10.1. Balancing these, while keeping in mind the objectives of the organisation, can be a difficult goal.

Figure 10.1: Challenges in website design



10.2 For the Transport Scotland website, some of the challenges are made more acute by the varying degrees of understanding of transport issues that users have. It is clear from the research that there is a lack of understanding of the remit of Transport Scotland outside those who work in the transport sector and it is important to provide some guidance to visitors about what they can expect from the website.

10.3 Furthermore, the information required from users varies substantially. Industry professionals look for detailed, technical data on current projects or consultations, while local residents seek information on how projects might affect them. The overall structure of the website needs to be simple, in order that those with little experience in transport can navigate to the content they need, while facilitating easy access to the detailed technical information required by transport professionals.

10.4 Given these challenges, the current Transport Scotland website provides a satisfactory experience for its users. The website generally meets expectations in terms of the design, content and functionality and users can successfully navigate it to access the key content made available.

10.5 A number of key usability and accessibility barriers exist, which impact upon the ease with which users can locate information. The website has a number of accessibility problems and there is much work to be done before the website meets the AA standards of the Web Content Accessibility Guidelines, published by the World Wide Web Consortium. Without this work being undertaken, some users with disabilities will continue to find it difficult to access the web content.

10.6 The content on the website is generally well-received by stakeholders, with material being considered specific, useful and easy to understand. However, the content provided on the website is primarily text-based, which means that users skim through it and miss important details contained within the material. The website also uses a lot of jargon and acronyms, which few users understand.

10.7 There is considerable interest and support among stakeholders for the development of the Transport Scotland website. Ideas for new ways of displaying content and new functionality were positively received. Many stakeholders welcomed these ideas as things that would enhance the website experience, and make the website easier to use and the content more accessible to users.

CHAPTER 11: RECOMMENDATIONS

11.1 The following chapter lists the recommendations from the review of the Transport Scotland website. The recommendations have been made across several different areas and each are listed in turn. Within each section, different priorities have been assigned to each recommendation. The three levels of priority are:

> *Priority one*: Should be urgently adopted. Failure to do so will continue to present a considerable usability or accessibility barrier.
>
> *Priority two*: Should be adopted in the medium term. While not presenting a considerable usability or accessibility barrier at present, adoption of the recommendation will make the website easier to use.
>
> *Priority three*: Should be considered. The recommendations will improve the website experience for users.

Chapter references have been provided at the end of each recommendation.

Site structure

11.2 Implementation of these recommendations will provide easier access to some of the key content on the website, particularly projects and reports.

11.2.1 Priority one

> Enhance the visibility of the primary navigation menu. Increase the font size, improve the colour contrast and consider moving the menu below the main page image. (6.14)
>
> The primary navigation structure should be simplified by removing the 'Projects' link and instead providing access to rail reports from the rail section of the website and road reports from the road section. (6.21)
>
> Align the top of the secondary navigation menu with the body content, not with the banner image. (6.24)
>
> Position the links to 'Consultation Papers and Responses' and 'Publications and Guidance' on the 'Reports' landing page, not the secondary navigation menu. (7.32)

11.2.2 Priority two

> Consider merging the 'Consultation Papers and Responses' and 'Publications and Guidance' sections to avoid users having to distinguish between them. (7.32)

11.2.3 Priority three

Remove the tertiary navigation menu from all pages other than the homepage. (6.29)

Consider whether some or all reports can be accessed through the rail and road links in the primary navigation menu, rather than via the separate 'Reports' link. (6.19)

Navigation

11.3 Implementation of these recommendations will enable users to navigate through the website more easily. Providing standard ways of displaying links, menus and content will make the site easier for users to learn.

11.3.1 Priority one

Reduce the number of duplicate links available across the website, in particular from the homepage. Where duplicate links exist on the website, ensure that these are worded identically. (6.16)

Standardise the way in that links are displayed. Avoid standard text colours, underline all links and ensure that all links provide a concise description of the destination, without using any jargon. (7.22)

Repair or remove all links that are broken. (6.37)

11.3.2 Priority two

Reduce the number of secondary navigation links available on each page to around eight. (6.25)

Within the 'Project' pages, provide a consistent series of links to standard information. (7.22)

Develop a dropdown menu approach for the minor rail projects, replicating that designed for the road projects, which will allow users to navigate to the project directly. (7.19)

Re-order the minor road dropdown menu to list motorway projects above trunk road projects. Retain the road number ordering system within this. (Appendix 4, 4)

Site design

11.4 Implementation of these recommendations will refresh the look of the website and make it more enticing to visitors, as well as improving the accessibility of the website for disabled users.

11.4.1 Priority one

Improve the colour contrast across the website, particularly for menus and links. Contrast should be checked against the colour contrast checker on the Web Accessibility Toolbar[21] to ensure that sufficient differences exist. (5.3)

Ensure all images are optimised for the web and that all ALT tags follow best practice. Viewing pages with the images turned off will highlight how screen readers will handle them. (5.8 – 5.10)

11.4.2 Priority two

Improve the colour contrast of the organisation menu. (6.31)

11.4.3 Priority three

Remove the main page image. This will reduce the amount of content on the page that does not appear on page load as it requires scrolling. (5.6)

Develop all project microsites in the same style as the rest of the Transport Scotland homepage. (7.20)

Consider developing a new, fresher colour scheme, more in line with those used by the Highways Agency and Department for Transport. (4.6, 5.2, 9.5, 9.9)

Search Tool

11.5 Implementation of these recommendations will improve the visibility and performance of the search tool, increasing the likelihood that visitors who use it will be directed to the information they are seeking.

11.5.1 Priority one

Move the search tool into the primary navigation menu. (6.41)

[21] The Web Accessibility Toolbar is a free tool which allows for the manual testing of website accessibility. It can be downloaded from http://www.visionaustralia.org.au/ais/toolbar

11.5.2 Priority two

Re-design the search tool based around the Google template, with enhanced features that takes account of spelling mistakes, providing best matches and allowing for advanced searching. (6.42)

Tag content using terms that users are likely to search for, which will help to improve the quality of the results returned. (6.43)

Homepage

11.6 Implementation of these recommendations will ensure visitors to the website are clear what the remit of the organisation is, have clear routes to progress into the website, be able to access latest news from the agency and be directed to more relevant organisations if they have arrived in error.

11.6.1 Priority one

Reduce the number of links into the main website content. (6.15)

Reduce the word count on the page. Content could be reduced to a short paragraph outlining the role of Transport Scotland with a link to further information About Transport Scotland and bullet points summarising the role of the organisation around road, rail and concessionary travel, with links to further information. (4.4)

A clear, obvious route to the concessionary travel information should be made available, perhaps using terms like 'Free bus travel', rather than 'Concessionary travel'. (6.6)

11.6.2 Priority Two

Rename the 'Links' section 'External Links'. (4.7)

Introduce imagery which supports the full remit of the Transport Scotland website. Ensure that at no times do all images displayed identify the same transport mode. (5.4, 5.5)

11.6.3 Priority three

Increase the range of external websites linked to from the homepage to include other transport mode websites and projects not run by Transport Scotland. (4.7)

Consider introducing a 'Quick links' section to allow quick navigation to key content such as rail and road projects etc. (4.5)

Content

11.7. Implementation of these recommendations will ensure users are better able to assimilate the information presented to them and reach the desired detail they require. This should help both members of the general public and transport professionals to get what they want from the website, without getting lost in too much detail.

11.7.1 Priority one

Reduce the word count throughout the website through rigorous editing and presenting information in tables, diagrams and bullet point lists. (4.4, 7.8, 7.12)

Ensure that content is kept up-to-date. If data might be considered out-of-date by users, make reference to it being the latest information. (7.26)

Avoid the use of acronyms and jargon on the website, particularly when the term is used as a link. Expand acronyms the first time they are used on a page. (7.4, 7.5)

Provide a summary box containing key project details for each project. Details should include: background to the project and planned improvements; cost of the project; timetable and progress against timetable; impact upon travel for local residents and workers. (7.23)

11.7.2 Priority two

Provide information on how young people qualify for concessionary travel within the 'Who qualifies?' secondary navigation link on the Concessionary Travel page. (7.13)

Make a PDF version of each report available, with appropriate labelling to meet accessibility good practice. (7.34)

11.7.3 Priority three

Introduce more project based videos on to the website. (8.8)

Provide the opportunity for users to personalise the website by filtering out irrelevant types of content, by filtering out out-dated news and articles and by filtering out locations that are not of interest. (8.26)

Develop an interactive road map and rail map, which allows users to pin-point existing and planned projects. The map should be interactive and allow users to click through for further details on the projects. (8.22)

Programme Document

11.8 Implementation of these recommendations will improve trust in the programme document as an up-to-date source of information, ensure that users can locate all of the information contained in it and understand what the information means.

11.8.1 Priority one

Signpost better the second page of content by including 'Page one of two' at the bottom of the first page of the document. (7.27)

Repeat the column headings from page one on the second and subsequent pages. (7.29)

Provide the cost definitions in the relevant column heading. (7.28)

11.8.2 Priority two

Update the date of the document regularly, even if the data within it has not changed. (7.26)

11.8.3 Priority three

Make the scheme name a hyperlink to the relevant project summary page. (7.30)

Traffic Count Application

11.9 Implementation of these recommendations will improve the usability of this tool, allowing users to access the information and draw down the statistics they require more easily.

11.9.1 Priority one

Differentiate between traffic flow on the static map by using lines of different width as well as different colours. (Appendix 4, 21)

Provide a link to the traffic count tool more prominently on the page, towards the top left of the screen. (Appendix 4, 20)

Provide clear instructions on how to use the tool, in a prominent place next to the map. (Appendix 4, 27)

Make the red dots more sensitive, so that clicking on their edge launches the statistics. (Appendix 4, 25)

11.9.2 Priority two

Remove the physical detail from the map. (Appendix 4, 24)

Improve or remove the location search tool from the map application. (Appendix 4, 26)

Rail Performance Statistics

11.10 Implementation of these recommendations will increase the number of visitors accessing this information and improve the process of searching for performance statistics.

11.10.1 Priority one

Change the link to the Service Quality Incentive Regime data to 'Rail Franchise Performance Statistics'. (Appendix 4, 40)

Re-design the search tool allowing users to enter all of the information required at one go (e.g. station; line or class of train). The search should be able to run when some or all of these fields are filled in. (Appendix 4, 42 - 43, 45)

The search result should lead to a page providing clear links to the statistics of interest e.g. 'Performance statistics for Glasgow Queen Street High Level Station' or 'Performance statistics for Edinburgh to Glasgow via Falkirk line'. (Appendix 4, 44 - 45)

E-newsletter

11.11 Implementation of these recommendations will increase the visibility of the e-newsletter link and minimise the numbers of people who fail to complete the email subscription form.

11.11.1 Priority one

Only collect information that will be used for profiling or segmenting subscribers, or for servicing the subscription. Remove other fields from the form. (7.38)

Right align the field labels against the boxes. (7.42)

Remove the postcode finder application from the tool. (7.40)

Only use red font to highlight an error in the form completion. Combine the error message with a warning symbol to aid people with colour-blindness. (7.39)

The successfully subscribed message should not be on red background. (7.39)

11.11.2 Priority three

Position the newsletter more prominently on the website homepage and on the relevant pages on the website. (8.14)

Provide a quarterly newsletter, in line with subscriber expectations. (8.13)

APPENDICES

APPENDIX 1: ONLINE SURVEY QUESTIONNAIRE
APPENDIX 2: A GUIDE TO STATISTICAL RELIABILITY
APPENDIX 3: USABILITY TESTING DISCUSSION GUIDE
APPENDIX 4: TASK REVIEW
APPENDIX 5: KEY STAKEHOLDER DISCUSSION GUIDE
APPENDIX 6: ACCESSIBILITY AUDIT REPORT

APPENDIX 1: ONLINE SURVEY QUESTIONNAIRE

Improving the Transport Scotland Website

Thank you for taking the time to help improve the Transport Scotland website. The survey is being carried out for us by the independent research organisation, Ipsos MORI, and all of the answers will be treated in the strictest confidence. It should take between 5 and 10 minutes to complete.

The results will be used to improve the design and content of the Transport Scotland website.

ASK ALL

Q1	**How did you find the Transport Scotland website today? Please select just one option** SINGLE CODE	
	I followed a link from another website	1 (Please type in which website _____)
	I typed words into a search engine	2 (Please type in the terms you searched on_____)
	I typed the website address in directly	3
	The website is stored in my list of internet favourites	4
	Don't know / Can't remember	5

Q2	**What was it that you came to the website to find today? Please select all that apply.** MULTICODE	
	A news item	1
	General information related to roads	2
	General information related to rail	3
	Details of a specific transport project	4
	A specific report	5
	Information on concessionary travel	6
	Careers/job vacancies	7
	Information about Transport Scotland as an organisation	8
	Nothing specific, I was just browsing	9
	Other (please write in what)	10

Q3	**While using the website today, which of the following sections of the site did you visit? You can choose as many options as you like.** MULTICODE OK	
	Home page	1
	About us section	2
	Road section	3
	Rail section	4
	Concessionary travel section	5
	Projects section	6
	Reports section	7
	News section	8
	Careers section	9
	Links section	10
	None of these	11
	Don't know / Can't remember	12

Q4	**Did you find all of the information that you were looking for today?** SINGLE CODE	
	Yes, all of it	1
	No, but I found most of it	2
	No, but I found some of it	3
	No, I found none of it	4
	Don't know	5

ASK ALL THAT DID NOT FIND WHAT THEY WERE LOOKING FOR AT Q4

Q5	**What was it you were looking for that you were unable to find while using the Transport Scotland website today? Please type in your answer in the box below.**
	WRITE IN

ASK ALL

Q6	**How useful is the information you found on the Transport Scotland website today?** SINGLE CODE	
	Very useful	1
	Fairly useful	2
	Not very useful	3
	Not at all useful	4
	I didn't find any information	5

Q7	**How often have you used the Transport Scotland website in the last 6 months?** SINGLE CODE	
	This is the first time I've visited the site	1
	All or most days	2
	Once or twice a week	3
	Once or twice a month	4
	Once or twice in the last 3 months	5
	Once or twice in the last 6 months	6
	Don't know / Can't remember	7

DO NOT ASK THOSE WHO SAY THIS IS FIRST VISIT AT Q7

Q8	**Which areas of the website, if any, do you usually visit when you use the Transport Scotland website? You can choose as many options as you like.** MULTICODE OK	
	Home page	1
	About us section	2
	Road section	3
	Rail section	4
	Concessionary travel section	5
	Projects section	6
	Reports section	7
	News section	8
	Careers section	9
	Links section	10
	None of these	11
	Don't know / Can't remember	12

ASK ALL

Q9	**Overall, how satisfied are you with the Transport Scotland website?** SINGLE CODE	
	Very satisfied	1
	Fairly satisfied	2
	Neither satisfied nor dissatisfied	3
	Fairly dissatisfied	4
	Very dissatisfied	5
	Don't know	6

Q10	**Below are some statements about the Transport Scotland website. To what extent do you agree or disagree with each statement?** SINGLE CODE EACH ROW RANDOMISE LIST						
		Strongly agree	**Tend to agree**	**Neither agree nor disagree**	**Tend to disagree**	**Strongly disagree**	**Don't know N/A**
	The website content is clear and easy to understand	1	2	3	4	5	6
	I have difficulties finding my way around the website	1	2	3	4	5	6
	The information on the website is specific enough to meet my needs	1	2	3	4	5	6
	The website looks and feels well designed	1	2	3	4	5	6
	Some of the information on the website is out-of-date	1	2	3	4	5	6
	It usually takes me a long time to find the information I need	1	2	3	4	5	6
	The information on the website is useful to me	1	2	3	4	5	6
	It takes a long time to download information and reports from the website	1	2	3	4	5	6
	I remember where to find information I have looked for on previous visits	1	2	3	4	5	6

Q11	**Have you ever used the search facility on the website?** SINGLE CODE	
	Yes	1
	No	2
	Don't know	3

ASK ALL WHO SAY YES AT Q11

Q12	**Does the Transport Scotland website search facility help you to locate the information you are looking for?** SINGLE CODE	
	Yes, all the time	1
	Yes, most of the time	2
	Yes, some of the time	3
	No	4
	Don't know	5

ASK ALL

Q13	**In your opinion, what improvements would you like to see made to the Transport Scotland website?**	
	WRITE IN	
	No improvement needed	

Q14	**Which of the following, if any, would you like to be able to do using the Transport Scotland website?** MULTICODE	
	Download reports	1
	Subscribe to an email newsletter	2
	Download or listen to podcasts relating to transport projects or issues	3
	Download or watch videos relating to transport projects or issues	4
	Other	Please write in (_____)

The next few questions are about yourself. We collect this information purely to help analyse the findings of the survey. None of the information you provide can be traced back to you as an individual.

Q15	**Which of the following regions best describes where you live? Please select just one option** SINGLE CODE	
	Aberdeen and North-East	1
	Central and Fife	2
	Edinburgh and Lothians	3
	Glasgow and Strathclyde	4
	Highlands and Islands	5
	South Scotland	6
	Tayside	7
	Other UK	8
	Elsewhere in Europe	9
	Elsewhere in the world	10

Q16	**Are you male or female?** SINGLE CODE	
	Male	1
	Female	2

Q17	**Which of the following age ranges do you belong to?** SINGLE CODE	
	Under 18	1
	18-24	2
	25-34	3
	35-54	4
	55-64	5
	Over 65	6
	Rather not say	7

Q18	**Do you have a disability or learning difficulty?** SINGLE CODE	
	Yes	1
	No	2

ASK ALL WHO SAY YES AT Q18

Q19	**Please state which of the following impairments apply to you.** MULTICODE	
	Deafness or severe hearing impairment	1
	Blindness or severe vision impairment	2
	A condition that substantially limits one or more basic activities such as typing or using a mouse	3
	A learning disability (such as Down's Syndrome)	4
	A learning difficulty (such as dyslexia)	5
	Other	6 Please type in
	Rather not say	7

Q20	**What assisted technology, if any, do you use to access the Transport Scotland website?** SINGLE CODE
	WRITE IN
	None

ASK ALL WHO SAY YES AT Q18

Q21	**Have ever had any problems using this website?** SINGLE CODE	
	Yes	1
	No	2

ASK ALL WHO SAY YES AT Q20

Q22	**What problems have you had when using this website?** SINGLE CODE
	WRITE IN

ASK ALL

Q23	**And which of the following best describes the sector in which you work?** SINGLE CODE	
	Transport	1
	Public sector - Local government	2
	Public sector - Central Government	3
	Public sector - Parliament	4
	Other public sector	5
	Media/Journalist/PR	6
	Voluntary Sector	7
	Academic	8
	Other sector	9 (Please type in_____)
	I am unemployed	10
	I am retired	11
	I am a student	12
	None of these	13

Thank you for taking the time to complete this survey. It is very much appreciated.

We will be undertaking some follow-up research to explore improvements to the website in more detail. Would you be happy to be contacted by Ipsos MORI in future, about taking part in further research about how the Transport Scotland website can be improved?

IF YES

Please provide some contact details, so that Ipsos MORI are able to contact you in the future. This information will not be shared with Transport Scotland and will remain confidential at all times.

NAME	
E-mail address	
Contact number	
Post code	

IF CODE 1 (TRANSPORT) AT Q22 AND PROVIDE CONTACT DETAILS ABOVE ASK

Q24	**Which of the following best describes the specific area of transport in which you work?** SINGLE CODE	
	Transport - road	1
	Transport - rail	2
	Transport - engineering	3
	Transport - other (please type in what)	4

IF CODES 2-12 AT Q23 AND PROVIDE CONTACT DETAILS FOR FURTHER RESEARCH

Q25	**In order to assist us in gathering a variety of views in our further research, could you please indicate whether you fall into any of the following categories.** MULTICODE OK	
	I am directly affected by Transport Scotland's work or projects	1
	I have a professional interest in Transport Scotland's work or projects	2
	I am involved in a transport interest group	3
	None of the above	4
	Rather not say	5

APPENDIX 2: GUIDE TO STATISTICAL RELIABILITY

1 As noted previously in the main report, the sample for the online survey was self-selecting and the response rate was low. These are both factors which make it likely that there is a high non-response bias. It is impossible to know the impact of this bias.

2. Because the possibility for bias exists, the figures obtained in the survey are estimates rather than the 'true' values that would have been obtained if every visitor to the website has completed the survey. However, the variation between the sample estimates and the 'true' values can be *predicted* based on the size of the samples on which the results are based and the number of times that a particular answer is given.

3. The confidence with which researchers generally wish to make estimates is 95% - that is, they wish to be sure that there is only a 5% chance that the estimate has been obtained by chance. Strictly speaking, statistical theory cannot be applied to the online survey due to the self-selecting nature of the sample. This sample is a non-random sample as it is dependent upon the respondent having replied to the survey invitation on the website. However, as a very rough guide, the table below illustrates the predicted ranges for different sample sizes and percentage results at the '95% confidence interval', **for a randomly selected sample.**

Table A1: Predicted ranges for different sample sizes at the 95% confidence interval, assuming a simple random survey

Size of sample on which survey result is based	Approximate sampling tolerances applicable to percentages at or near these levels		
	10% or 90%	30% or 70%	50%
	±	±	±
100	6	9	10
200	4	6	7
300	3	5	6
496 (the sample for the online survey)	3	4	4
1000	2	3	3

Source: Ipsos MORI

4. For example, on a question where 50% of the people in a sample of 496 respond with a particular answer, the chances are 95 in 100 that this result would not vary by more than four percentage points above and four percentage points below the value that would be achieved from a complete coverage of the entire population using the same procedures. However, while it is true to conclude that the 'actual' result (95 times out of 100) lies anywhere between 46% and 54%, it is more likely to be closer to the centre of this band' (i.e. at 50%).

5. Statistical reliability should also be considered when comparing results from different parts of the sample, e.g. frequency of visit to the website. Differences in results between groups have only been commented on where they are of a level to suggest that there is a real difference in opinions or experiences. A difference, in other words, must be of at least a certain size to be considered statistically significant. Table A2 is a very rough guide to the sampling tolerances applicable to this study, **for a randomly selected sample**.

Table A2: Sampling tolerances

Size of samples compared	**Differences required for significance at or near percentage levels**		
	10% or 90%	30% or 70%	50%
	±	±	±
100 and 100	8	13	14
200 and 200	6	9	10
93 and 231 (frequent and infrequent visitors to the website)	7	11	12
163 and 324 (first-time visitors to the site and those who had used the site before)	6	9	9
496 and 97 (all respondents and those working in the transport sector	5	8	9

Source: Ipsos MORI

APPENDIX 3: USABILITY TESTING DISCUSSION GUIDE

Discussion Guide

Introduction

✶ General introduction to Ipsos MORI, the format of the interview, audio and visual recording, presence of observers in the viewing studio and confidentiality

Explain to User:

- We are helping our client to understand how to improve their current web site and want your comments and feedback on the things that you are going to see. The website we are using will be live, so all of the links that you click on should work.
- **We are independent from our client - I did not design these pages, and will not be offended if there are some parts you do not like! Please be honest about what you think.**
- We will spend some time looking over the website and I will ask you to look for information that is available. It is not a test. If you can't find something, that is a problem with the design that we will try to solve.
- I would like you to 'think out loud' whenever possible, keeping a running monologue, saying anything that comes to mind – let me know what you are thinking at each stage.

General Experience **5 mins**

✶ How often do you use the internet? What do you use it for? Do you buy online? What do you tend to buy? What else do you use the internet for? What information do you use the internet to look for? What about for transport related things? What do you look for? What websites do you use? How do you go about finding websites? Do you use search engines? Which ones?

Initial Browsing & Task Completion **10 mins**

SOME RESPONDENTS WILL BE INVITED TO EXPLORE THE WEBSITE FREELY. THIS WILL INDICATE HOW THE SITE APPEARS TO THOSE WHO ARE IN AN INFORMATION GATHERING PHASE	You have arrived at the home page of Transport Scotland. I would like you to spend a few minutes exploring the website. Feel free to click on any part of the site which you are interested in. This is a live website, so all of the links should work. Once you have spent some time looking around the site, we will review the different pages that you visited and try to find specific information. THESE RESPONDENTS WILL THEN BE ASKED TO COMPLETE VARIOUS TASKS. I would now like to ask you I would like you to try and complete some tasks on the website, which I will give you in a moment. Feel free to explore the site as you try to complete the task. This is a live website, so all of the links should be working. Once you have completed the tasks, we will go through the different pages you have visited and talk about them in more depth.
OTHER RESPONDENTS WILL BE ASKED TO COMPLETE SOME PARTICULAR TASKS, TO REPLICATE HOW THOSE COMING TO THE SITE WITH A PARTICULAR ACTION IN MIND WOULD BEHAVE INITIAL REACTIONS,	I would now like to show you this website www.transportscotland.gov.uk. I would like you to try and complete some tasks on the website, which I will give you in a moment. Feel free to explore the site as you try to complete the task. This is a live website, so all of the links should be working. Once you have completed some of the tasks, we will go through the different pages you have visited and talk about them more.

NAVIGATION PROBLEMS WILL BE GATHERED	*TASK ONE – Find the environmental statement for the A90 Balmedie to Tipperty trunk road project and its completion date* *TASK TWO – Find a map of the M74 project, find out the cost of the project and look for details on the archaeological dig taking place* *TASK THREE – Find the announcement by Ministers in the second half of 2007 announcing the preferred option to replace the Forth Road Bridge* *TASK FOUR – Find out what stations will be located on the Glasgow Airport Rail link route and find the timetable for the project* *TASK FIVE – Find the details of the national concessionary travel scheme as it applies to disabled travellers* *TASK SIX – Find information on the review of transport projects currently being undertaken by Transport Scotland* *TASK SEVEN – Find the latest Scottish Transport Appraisal Guidance and information relating to the evaluation of an option as part of the post-appraisal* *TASK EIGHT – Find volume of traffic information on the M8 for a location of your choosing* *TASK NINE – Find information about the planned improvements to the Edinburgh to Glasgow railway line* *TASK TEN – Find Transport Scotland's Freedom of Information Publication Scheme* *TASK ELEVEN – Find what jobs are published on the website* *TASK TWELVE – Find statistics showing FirstScotRail's most recent performance on the Edinburgh to Glasgow railway line* *TASK THIRTEEN – Find information on the winter maintenance service carried out on Scotland's trunk roads* *TASK FOURTEEN – Subscribe to the Forth Replacement Crossing newsletter*

Detailed Page Reviews	**25 mins**
RESPONDENTS WOULD BE SHOWN THE PAGES ON THE TRANSPORT SCOTLAND WEBSITE AND DETAILED FEEDBACK WILL BE GATHERED	**HOMEPAGE** What did you think of this page? What were your initial reactions? Why? What did it make you feel about the website? Why? What did you think of the design and layout of the page? What do you think of the images? What about the text? What would you expect from a) the links at the top of the screen b) the links on the right hand side FOR THOSE WHO WERE FREELY BROWSING When you first left the page, you clicked [*interview specific*]. Why did you click there? What were you looking for? What were you expecting to find? **ROAD PAGE** What were your expectations of this page? What did you expect to see? Why? What do you think about the design and layout of the page? PROBE FOR PICTURES, COLOUR, TEXT, FONT, SIZE Which of the content is most memorable? Why? Is the content clear? Why / why not? How would you improve this page? *Probe: design/layout/content/images* How would you move on from this page? Where would you expect to go from this page? What would you expect to find? Why? **RAIL PAGE** What were your expectations of this page? What did you expect to see? Why? What do you think about the design and layout of the page? PROBE FOR PICTURES, COLOUR, TEXT, FONT, SIZE Which of the content is most memorable? Why? Is the content clear? Why / why not? How would you improve this page? *Probe: design/layout/content/images* How would you move on from this page? Where would you expect to go from this page? What would you expect to

	find? Why? **CONCESSIONARY TRAVEL PAGE** What were your expectations of this page? What did you expect to see? Why? What do you think about the design and layout of the page? PROBE FOR PICTURES, COLOUR, TEXT, FONT, SIZE Which of the content is most memorable? Why? Is the content clear? Why / why not? How would you improve this page? *Probe: design/layout/content/images* How would you move on from this page? Where would you expect to go from this page? What would you expect to find? Why? **PROJECTS PAGE** What were your expectations of this page? What did you expect to see? Why? Were your expectations met? What do you think about the design and layout of the page? PROBE FOR PICTURES, COLOUR, TEXT, FONT, SIZE How would you improve this page? Is it clear how to access projects? *Probe for major projects and the full list.* How would you move on from this page? Where would you expect to go from this page? What would you expect to find? Why? **SPECIFIC PROJECT DETAIL PAGES** What were your expectations of these pages? What did you expect to find? Why? Were your expectations met? What do you think about the design and layout of the page? PROBE FOR PICTURES, COLOUR, TEXT, FONT, SIZE What do you think about the depth of information provided about the projects on this page? Is it sufficient? Is it too detailed? Why? How would you improve this page? How would you access further project information? What do you think about the depth of information provided on these pages? Is it sufficient? Is it too detailed? Why? Did you notice the links on left and the right side of the page?

	REPORTS PAGE What were your expectations of this page? What did you expect to see? Why? Were your expectations met? What do you think about the design and layout of the page? How would you improve this page? Is it clear how to access the reports? How would you move on from this page? Where would you expect to go from this page? What would you expect to find? Why?

Registration for the Forth Crossing Newsletter **5 mins**

RESPONDENTS WOULD BE ASKED TO REGISTER FOR THE NEWSLETTER *THIS WILL PROVIDE INSIGHT INTO THE EASE OF SUBSCRIBING AND THE DEGREE TO WHICH VISITORS ARE HAPPY TO PROVIDE THE NECESSARY INFORMATION TO DO SO*	How easy was it to find the link to subscribe to the newsletter? Was it where you expected it to be? IF NO. Where would you have expected to find it? How easy was it to complete the subscription form? PROBE FOR UNDERSTANDING OF DIFFERENCE BETWEEN HTML AND TEXT VERSIONS What did you feel about the information you were being asked to complete? Are you unhappy about providing any of this? IF YES What information and why? Do you expect to provide this sort of information to subscribe? What would you expect to happen as a result of collecting this information?

Competitor Review **5 mins**

RESPONDENTS WOULD BE SHOWN ONE OR TWO COMPETITOR SITES AND ASKED FOR THEIR REACTION AND COMPARISONS WITH TRANSPORT SCOTLAND *THIS WILL PROVIDE INSIGHT INTO WHAT WORKS WELL ON OTHER SITES, LEARNINGS WHICH CAN BE APPLIED ON THE TRANSPORT SCOTLAND WEBSITE*	Websites will include: www.highways.gov.uk www.scotland.gov.uk www.dft.gov.uk Please take a few minutes to browse this website. What are your initial reactions to the design, layout and content? PROBE FOR PICTURES, COLOUR, TEXT, FONT, SIZE What do you like / not like about the website? How do you think it compares with the Transport Scotland website? Why? Is there anything on this website that you would like to see on the Transport Scotland website?

New Functionality **5 mins**

RESPONDENTS WILL BE PROVIDED WITH IDEAS / INITIAL DESIGNS FOR NEW FUNCTIONALITY ON THE TRANSPORT SCOTLAND WEBSSITE AND ASKED FOR THEIR REACTIONS TO IT *WILL TEST USER REACTION TO PROPOSED IDEAS*	One way of developing the website would be to provide information in different formats such as podcasts or videos. How helpful would this be for you? Why? Would you watch or listen to them them? When, how? And what sort of information would it be helpful to have in podcasts and videos? How long / short would you like these to be? Why? Who should present them? Another way of improving the website would be to allow users to personalise the homepage based on their preferences. So if you are only interested in rail issues, you could choose to have information on rail more prominently displayed on the homepage, or if you are only interested in one project or only projects in one area of Scotland, you could prioritise these. How useful would you find this functionality? Or do you think this is unnecessary for this website? ASK IF USEFUL How would you choose to personalise your homepage? What would you have on it? What about a map detailing where all the Transport Scotland projects are taking place? This map could also illustrate the precise location of upcoming projects. Do you think you would refer to this? Why?

ENSURE THESE HAVE BEEN COVERED IN DISCUSSION ABOVE. IF NOT, CONFIRM DURING THE SUMMARY.

Navigation

- Do they feel lost at any point?
- Is the process logical/understandable?
- Does the order in which information is presented seem logical?
- What is good/bad about the navigation?
- Do users recognise calls to action throughout the process?
- Is the structure/hierarchy clear?
- Do users notice all buttons?

Terminology and Iconography

- Are the icons/labelling clear/meaningful? Why? Why not?
- Are the colours clear?
- Is the terminology understandable/does it makes sense? – How can it be improved?
- Are they clear sign posts for users? Do they miss any signposting? Why?

Summary

- What was thought of the overall process – length, ease, clarity
- What recommendations if any, for improvements?
- What final suggestions for the designers?

THANK PARTICIPANT AND CLOSE

APPENDIX 4: TASK REVIEW

1. For the usability testing among members of the general public, disabled users and some stakeholder groups, fourteen tasks were developed for users to complete by using the website. The tasks varied in complexity, but all involved locating content or using functions on the website. Around half of the general public users were given time to freely browse the website before undertaking the tasks, while the remainder were asked to complete them immediately, from the homepage. Those from other stakeholder groups completed the tasks immediately. Users were presented with the tasks randomly, rather than in order from one through to fourteen and not all users were presented with all tasks. Some of the tasks were purposefully left rather vague, in order that users were not provided with too much guidance about where they could expect to find certain content on the website.

2. A short summary of users' experiences while completing the tasks are presented in this appendix.

Task One – Find the environmental statement for the A90 Balmedie to Tipperty trunk road project and its completion date

3. Users struggled to complete this task. Many users expected to find this information under the 'Road' link in the primary navigation menu, which they came to before the 'Project' link, when reading from left to right. Users then tended to scan the secondary navigation menu for a link to project information and usually clicked 'Motorway and Trunk Road Programme', which was considered to be the most relevant link listed. None of the users opened the programme document as they did not think they had reached the correct place to find what they were looking for.

4. A minority of users did find the 'Projects' link, either immediately, or after first trying the 'Road' link. All were eventually able to locate and operate the menu which provided access to all road projects. The listing by road number was considered to be appropriate by all users, although a number expected the Motorway projects to be listed before the Trunk Roads. Some expected to move onwards by simply selecting 'A90 Balmedie to Tipperty Dualling Project' from the list and did not expect to have to click the 'Go' button. Eventually, all did this, however.

5. Users scanned the project information without reading much of the detail. As a consequence, some people missed the link to the environmental statement and the link to the programme document, which contained the completion cost information. Eventually all found these links.

6. A small number of users had to resort to using the website search tool to locate the project. Most searched on "A90 Balmedie to Tipperty" and the search returned the project's summary page at the top of the listings. One user, however, typed "Balmede (sic) to Tipperty" and received the search error page. As the user had not recognised the spelling mistake, she was unable to progress without moderator assistance.

Task Two – Find a map of the M74 project, find out the cost of the project and look for details on the archaeological dig taking place

7. Once users found the 'Projects' page, all clicked on the image of the M74 to access more specific details. Users tended to skim the content on the page for the information they were looking for. At this point, a number noticed the tertiary menu which linked to the M74 Dig information, although the frame width meant that users had to scroll across to the right-hand side to see this. Users expected the information on the summary page to provide the project cost information and were surprised that it was not listed here.

8. Most users did find the secondary navigation link to 'The Project', which provided the cost information and noticed the link within that menu to the map.

Task Three – Find the announcement by Ministers in the second half of 2007 announcing the preferred option to replace the Forth Road Bridge

9. This task was successfully completed by most users. All but two used the 'News' link from the primary navigation menu and searched the archive by using the dropdown menu to select '2007' and 'July'. Users simply searched each month between July and December, before locating the correct news release.

10. Two users tried to access this information using the search tool, but were unable to find the relevant news article in this way.

Task Four – Find out what stations will be located on the Glasgow Airport Rail link route and find the timetable for the project

11. A number of users initially selected the 'Rail' link, rather than 'Projects' to find this information. However, once users had reached the 'Projects' landing page, all clicked the image to proceed to the project's summary page. Some found the route information by scanning through the text on this page, while others selected 'The Route' link in the secondary navigation menu and used the map to identify stations on the route.

12. Accessing information about the project timetable caused more problems. Eventually most did locate the information on the project's pages, but spent considerable time doing so.

Task Five – Find the details of the national concessionary travel scheme as it applies to disabled travellers

13. This task was completed successfully by all users. All users clicked on the 'Concessionary Travel' link from the primary navigation menu and then the 'Who Qualifies?' link in the secondary menu. This led to the required information.

Task Six – Find information on the review of transport projects currently being undertaken by Transport Scotland

14. This task was completed easily by users. After understanding what they were being asked to look for, all users expected to find this information on the 'Projects' page and navigated successfully to this using the primary navigation menu. While some users expected the review to be located at the top of the page – providing an overview – all successfully found it at the bottom of the page.

15. Given the recommendation that the project link be removed from the primary navigation bar (see Recommendation section), it is important to consider where best to place the 'Strategic Transport Project Review' information to enable users to access it. We would recommend that it be placed in the 'Reports' section, although links to it could also be placed from the 'Road' and 'Rail' project listings pages.

Task Seven – Find the latest Scottish Transport Appraisal Guidance and information relating to the evaluation of an option as part of the post-appraisal

16. This task proved difficult for all members of the general public and some transport professionals, as they had no understanding of what the document was they were looking for. Some searched 'Scottish Transport Appraisal Guidance' in the search box and the search returned the relevant link at the top of the page of results. All those using the search successfully clicked through to the summary page. Some then clicked on 'The Guidance' link in the body text to access the main document and searched the contents page for the term 'post-appraisal'.

17. Among those transport professionals who were aware of the document, most located it by clicking into the 'Reports' section of the website and clicking the Scot-TAG link in the secondary navigation menu. All of these users clicked the 'Scottish Transport Appraisal Guidance' link into the document and successfully navigated to the evaluation of an option in the post-appraisal chapter.

18. All users were prompted to discuss where this document should be located. All agreed that the reports section was the most appropriate, although many expected the reports to be listed on the main page, rather than via links in the secondary navigation menu.

Task Eight – Find volume of traffic information on the M8 for a location of your choosing

19. Overall, users experienced considerable difficulty when completing this task. All users were able to navigate to the application that provides traffic information by clicking on the 'Road' link on the primary navigation menu and then on the 'Traffic Count' link on the secondary navigation menu. However, not all users noticed the 'map application' link placed within the text on the webpage which leads to the required tool.

20. Most users instead clicked on the map on the page expecting to be able to find traffic information. When asked why they had clicked on this, users explained that because it was placed prominently on the webpage their attention was drawn to it. Some users also noted that the map already provided information on the average daily flow of traffic and thus expected to be able to find more detailed information on the M8 specifically. Users were confused when the new window opened with a map which provides the same information as the link they had just clicked on. Placing the link to the application in a more prominent position would make it more visible to users.

21. The average daily flow map presented additional problems for users with visual impairments. The use of colour to distinguish the different traffic flow information means those with colour blindness could not make out differences. Distinguishing between the flow rates using lines of different widths as well as different colours would improve this.

> *"This is assuming that everyone can distinguish colour."*
>
> Vision impaired user, using magnification software

22. Subsequently, users tended to skim read the text on the webpage and some missed the 'map application' link placed at the bottom of the text. These users then resorted to using the website's search engine and typed in phrases which mostly included the words "M8" and "traffic information". No user managed to successfully find the map application using the search engine. Eventually all users were able to locate the application by re-reading the text on the webpage. One user noted that it is necessary to scroll down the webpage in order to see the link and felt that was inappropriate as it is the most important piece of information on the whole page.

23. Once users found the link, further problems were identified. One transport professional was unable to load the map as she was using Internet Explorer 7. This was particularly frustrating as she had required similar information in the past and had to install Mozilla Firefox, an alternative website browser, specifically to access this application.

24. Another user also noted that the physical information on the map such as mountains, glens and lochs made the map look unnecessarily complicated. Removing these details would simplify the map.

> *"All the background clutter [on the map] is hard to make out. You could do without that."*
>
> Member of the general public, previous user of the website

25. In terms of the usability of the map application itself, many users felt that it was not particularly obvious what the red dots (which represent data points) scattered around the map show and therefore many failed to click on these. This problem was compounded when some users tried to click on these dots and nothing happened. The red dots themselves will need to be more sensitive and allow for clicking on their edges, rather than in the centre of them.

"It is not that intuitive. I guessed that it would be under 'Traffic Count'. When you get to the map, the search takes some playing with."

Transport / Engineering Consultant

26. A few users tried using the search engine on the application and typed in "M8". No results were displayed, which caused frustration. Thus all users looked for the M8 manually. Users were able to click on the map and move to the area where the M8 is, although some users initially clicked on the zoom in and out buttons. When they had found the M8, users clicked on the red dots. One user was pleased that he was able to export this information to an Excel document. Tagging the map application appropriately will enable those who use the search engine to find it. We would suggest using the phrases such as "traffic information", "traffic flow information" and "traffic count".

27. Clear instructions should also be provided on how to operate the tool, particularly covering how to navigate around the map, zoom in or out and operate the search facility. They should also state what the red dots represent and that they are clickable.

Task Nine – Find information about the planned improvements to the Edinburgh to Glasgow railway line

28. This task proved very difficult for users, even if they knew or had learnt the structure of the website. All users assumed this information would be included in the 'Project' information, not being aware of the distinction between on-going projects and consultations, which are published under the 'Reports' link.

"The logical place would be under projects. Improvements would be project-based."

Member of the general public, previous user of the website

29. All users navigated to the 'Projects' section of the website and from there onto the list of rail projects. Once the information was not located, most users were unsure about how to proceed. Instead, most users continued to look in the 'Rail' section and searched without success. Only a small number of stakeholders who had used the website before looked at the 'Reports' section.

"This sounds like it is something planned, but not yet underway. I am not sure whether many people would understand that."

Member of the general public, previous user of the website

30. Even for these users, few were sure whether the document would be archived under 'Consultation Papers and Responses' or 'Publications and Guidance'. Users resorted to clicking on one or the other, and searching to find it. Users who reached the report section located the information, with all navigating to the rail reports.

Task Ten – Find Transport Scotland's Freedom of Information Publication Scheme

31. Most users completed this task easily, locating the 'Freedom of Information' link in the organisation menu. However, some users, particularly with those with a visual impairment, found the grey font on white background to be difficult to make out. Once a user had clicked the link, all were able to proceed to the 'Publication Scheme' by clicking the link at the top of the list.

32. A minority of users spent a considerable amount of time looking for the 'Freedom of Information' link, as their attention was drawn to the content of the website below the 'Transport Scotland' banner heading.

Task Eleven – Find what jobs are published on the website

33. Users expected to find this information via a menu at the top or the bottom of the website, along with other organisational information.

34. As a result, all users were able to find the 'Careers' link. Many immediately noticed the 'Current Vacancies' link in the secondary navigation menu and were able to access the available jobs. However, others did not notice this menu, because the links are aligned with the image at the top of the page, not with the content.

> *"The graduate training scheme stands out, but the vacancies are quite hidden. It should have a click here for vacancies to make it more prominent."*
>
> Severe vision impaired user, using screen reading software

35. Part way through the usability testing, the two vacancies that had been displayed were removed. Users struggled to identify this was the case and expected some explanation that no vacancies were currently being advertised.

> *"It is not immediately clear that there are no vacancies. There is nothing to tell you that."*
>
> Rail industry interest group representative

Task Twelve – Find statistics showing First ScotRail's most recent performance on the Edinburgh to Glasgow railway line

36. This task proved very difficult to complete successfully. Most users expected to find this information in the 'Rail' section of the website and navigated to it by using the primary menu. Once there, users were unsure which link from the secondary menu would lead them to the required information.

37. Some users clicked on the 'Rail Franchise' link as they were aware that First Scotrail hold the rail franchise agreement and subsequently clicked on the 'First

Scotrail' link that appears. They were surprised that the information they were asked to look for was not under this section of the website.

38. Users also clicked on the 'Improving Railways' link on the secondary menu from the 'Rail' landing page. When asked why they did so, these users stated that this was the most relevant link as monitoring performance is an aspect of improving the railways. From there, users skim read the page and clicked on the subsequent link provided. Again, users were surprised that the information was not there.

39. Similar to other tasks, a number of users resorted to utilising the search engine on the website. Each user searched on a combination of the words the task was put into with "statistics", "Scotrail" and "performance" being the most popular ones. The search engine failed to provide users with an appropriate link.

40. Eventually, users clicked on 'Service Quality Incentive Regime', either as a last resort or because they were prompted by the moderator. All general public users and several transport professionals failed to understand what the term meant. Using a link such as 'Rail franchise performance statistics' will provide better guidance to users of what to expect.

41. Users skim read the page and usually clicked on one of the two maps or selected the 'your line of route' link at the end of the text. Those who clicked on the map were unable to proceed and had to return. A minority then clicked the 'Results for your line' link in the secondary navigation menu.

> *"I was not sure what I was looking for. The term service quality incentive regime meant nothing. Something like train performance statistics would be better."*
>
> Transport / Engineering Consultant

42. When faced with the 'Station' and 'Line' drop down boxes, some users went directly to the latter one expecting to be able to select the Edinburgh to Glasgow line. As there was no content in this box, these users were confused and a few assumed that the application was faulty. All eventually selected either 'Edinburgh Waverley' or 'Glasgow Queen St HL' from the drop-down list in the 'Station' box. Further confusion was created as the page refreshed itself without displaying the required information or without an action having been taken.

43. A few users managed to select the correct train route from the 'Line' box though the rest had to be prompted by the moderator. Expectations were again not met as the page refreshed itself and a new 'Train Class' box appeared. No users knew the class of the Edinburgh to Glasgow train but since there is only one option, all could proceed. However, no users clicked the 'View Report' button for either the station or the train line – all did so for the train class.

> *"That was really hard. Doing the class, the route, the line. I assumed you did one or the other, route or station, and class came up"*
>
> Member of the general public, non-user of the website

44. The information again failed to meet expectations. Users were expecting some charts and graphs charting service performance, but this information could only be accessed by clicking a further link in the first paragraph of text. This link did not convey its importance.

45. The way users are expected to search for a particular line is not intuitive and it requires too many steps. Users should be asked to input all the criteria they want to search on immediately (such as station, line or train class) and then proceed with the search. Once the search has been made, links to the performance charts and statistics need to be made clearer, such as 'Performance statistics for Glasgow Queen Street High Level Station' or 'Performance statistics for Glasgow to Edinburgh via Falkirk line'.

Task Thirteen – Find information on the winter maintenance service carried out on Scotland's trunk roads

46. Generally, users completed this task easily. All users clicked into the 'Roads' section of the website. Most then skimmed the main text on the page, before looking through the list of links in the secondary navigation menu.

47. While most identified the correct link here and clicked through to the relevant information, a small number demonstrated that they were not really reading the text at all and missed the link itself. These users selected a range of other links which they considered might be appropriate, including 'Climate Change & the Roads' and 'Motorway and Trunk Road Programme'.

Task Fourteen – Subscribe to the Forth Replacement Crossing newsletter

48. All users who were asked to complete this task were able to do so without experiencing any major problems. These users navigated to the 'Project' landing page and clicked on the 'Forth Replacement Crossing' link. Once on the webpage for this project, all users noticed the link provided at the right of the webpage though some initially looked on menu on the left. Users were able to fill the subscription form out though some noted that they were asked for too much personal information[22].

[22] See Chapter Eight for a more detailed discussion on the usability of the e-newsletter subscription form and Chapter Ten for further information on interest in the e-mail newsletters among key stakeholders.

APPENDIX 5: DEPTH INTERVIEW GUIDE

Description	Aims and comments
INTRODUCTION **Introduce self and Ipsos MORI** Independent research organisation **Background and purpose of the interview** Transport Scotland has commissioned Ipsos MORI to conduct a review of their website. The review will directly feed into the development of an improved website. The purpose of today's interview is to explore your perceptions and experiences of using the current website from a professional capacity. We will look at different parts of the website and see how well it meets your needs. **Request permission to tape record** Completely confidential, for research purposes only and can be turned off at anytime.	Remember to emphasise confidentiality of the research
WEBSITE USE → How regularly do you visit the Transport Scotland website? FOR THOSE WHO SAY REGULARLY: → In general, why do you visit the website? → Which areas of the site do you usually visit? → Are there any specific pages you visit a lot? Why? Do those pages meet your needs? IF NO Why do these pages not meet your needs? What needs to change for them to do so? FOR THOSE WHO SAY RARELY OR INFREQUENTLY: → Do you remember why you used the website the last time you visited? → Do you remember what sections of the website you looked at? → What were you looking for? Did you find the information? → Why do you not visit it more often? → Do you ever look at the Transport Scotland website on a mobile device like a PDA, mobile phone	This section aims to find out which section of the website respondents visit and for what purposes.

or blackberry? IF YES What are your experiences of doing so? How easy is it to use the website on these devices? IF NO: Are you likely to want to do so? What are your expectations of using these devices to access websites? Why is this?	
PERCEPTIONS OF THE WEBSITE SHOW WEBSITE. OPEN AT HOMEPAGE, OR ANOTHER PART OF THE WEBSITE WHICH THE RESPONDENT DESCRIBES AS USING FREQUENTLY. LET RESPONDENT FAMILIARISE THEMSELVES WITH WEBSITE IF AN IRREGULAR USER → Thinking about the Transport Scotland website, what is the general impression you have of it? Why do you say that? → What do you particularly like about the website? Why do you like this? → What do you particularly dislike about the website? Why do you not like it? How could this be improved? **Design and layout** I'd now like you to focus on the design and layout of the website. → What do you like or dislike in terms of the design and layout of the website? Why is this? PROBE FOR Use of images; colours; text styles etc. → How easy or difficult do you find to navigate around the website? IF DIFFICULT Why do you find it difficult? What kinds of problems have you had? → How would you like to see the navigation improved? PROBE FULLY particularly for difficulties with finding specific information relating to their needs **Needs and content** SHOW RELEVANT PARTS OF THE WEBSITE TO RESPONDENTS → Overall, how well would you say the current website serves your needs? Why? PROBE FULLY → Does the website provide enough information to meet your professional needs? PROBE What would you like more of?	These are general questions designed to explore top of mind issues respondents may have with the website Examine ease of use and look of the website; particularly whether it is modern looking. In this section we are interested in assessing the content of the website against the respondents' needs

→ What could be improved to better address your needs? → Is there any information, within the remit of Transport Scotland, which is missing but would be helpful to include on the website? Probe fully if further information is identified → How up to date do you think the content is? Is the website updated frequently enough? Why do you say this? → Have you looked at any of the reports on the website? Do you think they are detailed enough? What more information would you like contained? How easy are the reports to read? Why is this? How would you improve the reports themselves? Why is this? **Compared to its peers** I'd now like to compare the Transport Scotland website with some other websites. Particularly I am interested in the Scottish Government, the Department of Transport and the Highways Agency websites. → Have you ever visited any of these? What do you like most about these other websites? What do they do particularly well? Why? SHOW HIGHWAYS AGENCY WEBSITE TO THOSE WHO HAVE USED IT → In particular, what do you think this website does better than Transport Scotland? Why do you say that? PROBE FOR design, content and functionality.	Transport Scotland would like their website to be at least as good as its peers. This section looks at respondent experiences of other related websites.
<u>IMPROVEMENTS</u> The next few questions are about improvements that could be made to the Transport Scotland website. **Homepage** → The current homepage is geared towards informing visitors of Transport Scotland as a new agency. Is this appropriate? Why? → What information do you think should be placed on the homepage? Why is this? PROBE FULLY **New content in different formats** → One way of developing the website would be to provide information in different formats such as podcasts or videos. How helpful would this be for you? Would you watch or listen to them them? When, how? → And what sort of information would it be helpful to have in podcasts and videos? How long / short	This section focuses on potential improvements to the website.

would you like these to be? Why? Who should present them? **Personalised content** → Another way of improving the website would be to allow users to personalise the homepage based on their preferences. So if you are only interested in rail issues, you could choose to have information on rail more prominently displayed on the homepage, or if you are interested only in one specific project or projects in one area of Scotland you could prioritise these. How useful would you find this functionality? Or do you think this is unnecessary for this website? ASK IF USEFUL How would you choose to personalise your homepage? What would you have on it? **Map of projects** → What about a map detailing where all the Transport Scotland projects are taking place? This map could also illustrate the precise location of upcoming projects. Do you think you would refer to this? Why? **General** → On the basis of what we've discussed today what are the main improvements, if any, you would like to see on the website?	
CLOSE → Apart from the issues we have already discussed, are there any other issues relating to the Transport Scotland website you would like to raise? **Thank respondent for their time and close** **END OF INTERVIEW**	

APPENDIX SIX: ACCESSIBILITY AUDIT REPORT

Introduction

This report contains the findings of an accessibility audit conducted by AbilityNet on behalf of Ipsos MORI and Transport Scotland, evaluating the accessibility of the Transport Scotland website (www.transportscotland.gov.uk) against W3C Web Content Accessibility Guidelines 1.0 standards. The website was reviewed between 24 and 28 July 2008.

This document reports the findings of the accessibility audit, which is one element of a wider review of the Transport Scotland website undertaken by Ipsos MORI. The full research programme consists of:

- An online survey hosted on the Transport Scotland website gathering visitor feedback
- Interviews and usability testing among stakeholders of Transport Scotland, including MSPs, journalists, Local Authority representatives, those employed in the transport sector and members of the General Public
- Usability testing among eight disabled users

Overview

Of the 20 pages audited to AA compliancy status 11 are single-A compliant, and 0 are AA compliant.

The pages tested were: (Because the URL remained static when browsing the site, only the page titles have been given.)

1. http://www.transportscotland.gov.uk/
2. http://www.transportscotland.gov.uk/road/development-near-trunk-roads/major-planning-applications
3. http://www.transportscotland.gov.uk/road/traffic-count/map-application
4. http://www.transportscotland.gov.uk/concessionarytravel
5. http://www.transportscotland.gov.uk/concessionary-travel/who-qualifies
6. http://www.transportscotland.gov.uk/projects
7. http://www.transportscotland.gov.uk/projects/m74-completion
8. http://www.transportscotland.gov.uk/projects/m74-completion/the-project/fly-through
9. http://www.transportscotland.gov.uk/projects/m74-completion/the-project/timeline
10. http://www.transportscotland.gov.uk/rail
11. http://www.transportscotland.gov.uk/rail/service-quality-incentive-regime
12. http://www.transportscotland.gov.uk/rail/service-quality-incentive-regime/results-for-your-line
13. http://www.transportscotland.gov.uk/reports
14. http://www.transportscotland.gov.uk/reports/consultation-papers-and-responses
15. http://www.transportscotland.gov.uk/reports/consultation-papers-and-responses/j9651-00.htm
16. http://www.transportscotland.gov.uk/news
17. http://www.transportscotland.gov.uk/stag/td
18. http://register.transportscotland.gov.uk/
19. http://www.transportscotland.gov.uk/sitemap
20. http://www.transportscotland.gov.uk/accessibility

Specific W3C Web Content Accessibility Guidelines 1.0 checkpoints are given as reference in the text of this report. The complete list is available online at: http://www.w3.org/TR/WCAG10/full-checklist.html

The 'Main Findings' section of this report details accessibility issues which were encountered during the audit together with suggested remedies.

At the end of this report there is a glossary of accessibility related terms. Whilst not all of them are relevant to this report, they have been included for reference.

Conventions Used within the Report

The following conventions are used within this report:

[ref: number]	This will be used to identify a particular W3C Web Content Accessibility Checkpoint.
[page number]	This will be used to identify a particular page reviewed when discussing issues and recommendations. The page number corresponds to the same number in the list in the Overview.
<code>	This will be used to show code snippets.
<code>	This will be used to show suggested changes to code to improve the accessibility of the website.

Summary of key issues

Priority 1 Accessibility

The audit found **5** priority 1 accessibility checkpoint errors that need to be addressed:

- **Images [ref: 1.1] -** The use of alternative text (also known as 'alt tags') for pictures, text as graphics, decorative graphics, spacer gifs, form buttons and graphical links is fundamental to accessibility. This issue was encountered on pages **[6, 7, 10, 11, 12, 17]**

- **CSS [ref: 6.1] -** Organize documents so they may be read without style sheets. For example, when an HTML document is rendered without associated style sheets, it must still be possible to read the document. This issue was encountered on one page **[3]**

- **Tables [ref: 5.1] -** For data tables, identify row and column headers. This issue was encountered on page **[9]**

- **Frames [ref: 12.1] -** It is important to title each frame, particularly for vision impaired users, so that users are aware of whereabouts on a page they are. This issue affected page **[3]**

- **Scripting (Client-side) [ref: 6.3] -** A level 1 requirement is that pages work if JavaScript is disabled or not supported – its use impacts on around 5% of web users, those disabled people using adaptive technology, people who have high security settings (in which JavaScript is turned off) and PDA users. This issue was encountered on pages **[2, 3, 6, 12, 17]**

Priority 2 Accessibility

The audit found **8** priority 2 accessibility checkpoint errors that need to be addressed:

- **Images of Text [ref: 3.1] -** On page **[15]** there are images of text used for different language examples. Some of these could be coded up as text with the appropriate language attribute.

- **Validation [ref: 3.2] -** Ensure pages validate against html standards. This error was found on pages **[3, 9, 11, 17, 18]**

- **CSS [ref: 3.3] -** The majority of the pages tested used table based layouts, which could instead be achieved by using CSS.

- **Headings [ref: 3.5] -** Headings are useful for providing an overall document structure and dividing a document into logical sections. On the majority of pages tested, headings were implemented incorrectly.

- **Lists [ref: 3.6] -** Mark up lists and list items properly. On all pages tested on the site, the main horizontal and left hand navigation bars could usefully be coded up as lists

- **New windows [ref: 3.5] -** On several of the pages tested, there was a link that opened in a new window when clicked on by the user, without first warning the user that this would happen. This can be disorienting for some users as once content is opened in a new window, the back button no longer works and they may be unsure of how to return to the originating page

- **Links [ref: 13.1] -** Clearly identify the target of each link. Found on pages **[6, 20]**

- **Applets & Scripts [ref: 6.4] -** For scripts and applets, ensure that event handlers are input device-independent. Identified on page **[4]**

Main Findings

The following section contains a detailed breakdown of checkpoint failures together with recommended solutions. The recommendations provided will help ensure that the website is as accessible as possible to a wide variety of users.

Priority 1:

Images [ref: 1.1]

Why is it important? And who does it affect?

The use of alternative text (also known as 'alt tags') for pictures, text as graphics, decorative graphics, spacer gifs, form buttons and graphical links is fundamental to accessibility – it is responsible for around 30-40 percent of all problems affecting a range of disabled people accessing the web.

All graphics on a page need to be labelled correctly for a number of reasons. Blind users accessing the website via a screen reader will have only the information in the alt tag to gauge the importance of a particular image. In addition, missing alt text on graphical links and form buttons will impede the usability of the website for users accessing via voice recognition software. The usability of the website will also be significantly reduced for users with cognitive impairments or dyslexia as software packages that they use to assist them (e.g. Text Help's Read and Write) will speak the content of the page including pictures and graphical links. Therefore, if no alternative text is provided, this would reduce the readability and thus their understanding of the content.

Issue: Images missing alt text or displaying inappropriate alt text

On pages **[6, 7, 10, 11, 12, 17]** the banner image alt text has the word "Banner" suffixed on, e.g. Projects Banner.

There is no need to add the "Banner" text onto the alt text, as this will not add any extra meaning to screenreader users.

Another example is on page **6**. There is a small table of graphical links, some of which have alt text of 'M74 Completion Logo' 'Aberdeen Western Peripheral Route Icon'. Again, there is no need to have the "Icon" or "Logo" suffix on this alt text.

Recommended solution

A good way of checking alt text is to view a page with images turned off (by unchecking the 'Show pictures' box under the Advanced tab in Internet Options in Internet Explorer) and make sure the page still makes sense. Displaying content in this way will show the alternative text for the images as end users would encounter it.

In the above cases, there is no need to add "Icon", "Logo" or "Banner" to the end of alt text. Screenreader users, who most often make use of alt text, will be automatically alerted to the fact that an item is an image when they hear the alt text being read out.

Generally, because of the relatively small amount of graphics on the site, there were no other issues to do with alt text.

CSS [ref: 6.1]

Why is it important? And who does it affect?

This affects users of older, or specialist browsers that may not support CSS, while other users, particularly those with a visual impairment, may specify their own preferred stylesheet within their browser settings, which then overrides styles specified by the website.

Issue: Interactive map on page 3 does not function with CSS disabled

With CSS disabled, the map is not displayed correctly in IE7. There was a note on the page about possible issues with IE7, but this issue only manifested itself when CSS was disabled.

Recommended solution

With CSS disabled the map keeps flickering, being displayed for a fraction of a second before disappearing.

The main issue is to resolve this flickering problem, which would require testing the site on a machine with CSS disabled to see how it is affected. If this is not possible, then an alternative, possibly text only version of the page, would be required.

Having a text only alternative would also get round of the problem of the map not functioning if JavaScript is disabled (mentioned below).

Tables [ref: 5.1]

Why is it important? And who does it affect?

Tables need to be marked up using row and column headings, with data in the cells associated directly with those headings, in order for screen readers to navigate them effectively. If the column headings are just marked up as regular table cells, then they will be read out as such. When column headings are marked up correctly, a screen reader can then reference each table cell to that particular header, reading it out before it reads out the data.

Issue: Table headers missing

On page **[9]** the Timeline table does not have the table headings present.

Recommended solution

Specify the table headers using <th scope="col">Column name</th> within the first table row, above the actual content table cells. The scope=col attribute specifies that the heading is a column, rather than a row, heading.

e.g.

<table>
<tr><th scope=”col”>Timeline activity</th><th scope=”col”>Completion date</th></tr>

Frames [ref: 12.1]

Why Is This Important \ Who Does This Affect?

Sites with Frames and iFrames cause barriers for adaptive technology users. In particular, navigating around a site is very difficult if frames are not titled clearly and accurately to their purpose and content because screen readers and text browsers such as Lynx view a webpage built with frames not as a complete page but as a list of frame links, so they have to navigate into each frame to view its contents.

Issue: Page is missing iframe titles

Page **[3]** uses an iFrame for the embedded map on the page, but does not provide a title for this frame.

Recommended solution

If frames must be used, use the title attribute to provide a meaningful title for each frame e.g.

<FRAME NAME="Content" SRC="main.html" TITLE="Interactive map”>

Scripting (Client-side) [ref: 6.3]

Why is it important? And who does it affect?

A level 1 requirement is that pages work if JavaScript is disabled or not supported. Statistically, this impacts a significant minority of web users – around 5 percent would have issues with a site that used JavaScript because they have browsers that do not support it or have it disabled. This 5 percent is made up of people surfing the web behind secure firewalls that for security reasons have disabled JavaScript, PDA users and disabled people who use adaptive technology that has limited or no support for JavaScript.

Source: http://www.thecounter.com/stats/2004/May/javas.php

Issue: Some links are JavaScript dependant

On page **2** the Go button on the Planning Applications form does not function if JavaScript is disabled.

On page **3** the interactive map is reliant on JavaScript being enabled.

On page **6** the Go button on the Trunk Roads section does not work with JavaScript disabled.

On page **12** the form relies on JavaScript and is no longer usable with JavaScript disabled.

On page **17** the dropdown boxes all use the JavaScript onChange event handler to take users to a new page as soon as they choose a link. However, this feature no longer worked with JavaScript disabled.

Recommended solution

For pages **2, 6, 12** it was not obvious how JavaScript was tied to the particular form buttons, but with JavaScript disabled, the forms no longer functioned.

To pass this checkpoint, these pages will all need to function with JavaScript disabled.

On page **17** the drop down boxes all use the onChange event handler to activate links. Rather then using this method, a better solution would be have a separate Go button next to each drop down box, which a user can press once they have chosen their link. This would correct the problem for this page, and has the advantage of addressing the Priority 2 issue concerning JavaScript, namely, that the current method used is not accessible to keyboard only users.

An alternative to the map on page **3** might be a text only version, using a drop down list of locations rather than a series of links on a map. This would address both this issue and the issue described above about the map being unusable with CSS disabled.

For the map page, it may be wise to include some text for users who do not have JavaScript enabled. This can be done using the <noscript> tag e.g.

```
<noscript>
<p>We have detected that you do not have JavaScript supported. You may wish to visit our alternative, non-javascript, map.</p></noscript>
```

This will only be displayed to users who do not have JavaScript enabled.

Priority 2:

Images of Text **[ref: 3.1]**

Why is it important? And who does it affect?

The W3C guidelines state that when an appropriate mark-up language exists; it is best-practice to use mark-up rather than images to convey information. Using mark-up and Cascading Style Sheets (CSS) where possible rather than images promotes accessibility as it allows text to be magnified or interpreted as speech or Braille. The added benefit is that search engines can use text information.

Issue: Image of text used where mark-up and CSS could have been used

On page 15, there were examples of the alternative languages available: See Fig. 1 below

Fig. 1 – Images of text

The above example is entirely made up of images of text, but could be made more accessible by replacing portions with CSS styled text.

Recommended solution

Where possible, replace images of text with actual CSS styled text. From the above example, this will only be possible with a few of the languages. An example of this would be the Gaelic example above:

```
<span lang=”gd”>Gheibhear lethbhreacan....</span>
```

Note the language code ‘gd’. Using this language code ensures that any screenreader users hear the text pronounced as correctly as their screenreading software will allow.

Some information on adding accented characters can be found here:

http://tlt.psu.edu/suggestions/international/bylanguage/gaelic.html#htmlcodes

For languages, such as Urdu, Punjabi, Traditional Chinese etc, where a text version cannot easily be provided using images of text is perfectly acceptable.

Validation **[ref: 3.2]**

Why is it important? And who does it affect?

Adaptive technology makes the assumption that web pages have been created using specific rules and that they validate against those standards - if this is not the case it can cause quirky or unpredictable behaviour in adaptive technology software.

Issue: HTML does not validate

Pages **3, 9, 11, 17, 18** all displayed some validation errors.

Recommended solution

Use the W3C HTML validator to check the code and fix any problems:
http://validator.w3.org/

CSS **[ref: 3.3]**

Why is it important? And who does it affect

Style sheets should be used to control layout and presentation as this allows for graceful degradation of the page in older browsers and provides more flexibility for alternative viewing devices.

Issue: Tables are used for layout

On all pages tested, except **18, 19, 20**, the layout was governed by tables. The same layout and presentational style could be achieved by using CSS to position elements and for presentational purposes.

An advantage of CSS is the ability to provide multiple layouts per page, so a particular page might have the standard layout used for most computer users, with separate layouts for handheld devices such as mobile phones or for PDAs, as well as a separate layout for when the content is printed.

Recommended solution

Replace table based layout with a CSS controlled design. For more information on CSS and its implementation, see http://www.w3schools.com/css

Headings **[ref: 3.5]**

Why is it important? And who does it affect?

Correctly structured headings enable users to gain a feel for the structure of the document, making content more readable. Screen reader users can listen to a list of headings to find out which section of the page interests them instead of listening to the entire content.

This issue affects all users but it specifically affects screen reader users and users with a cognitive disability.

Issue: Incorrect headings

Many of the pages had multiple H1 level headings.

See Fig 2 below – the homepage

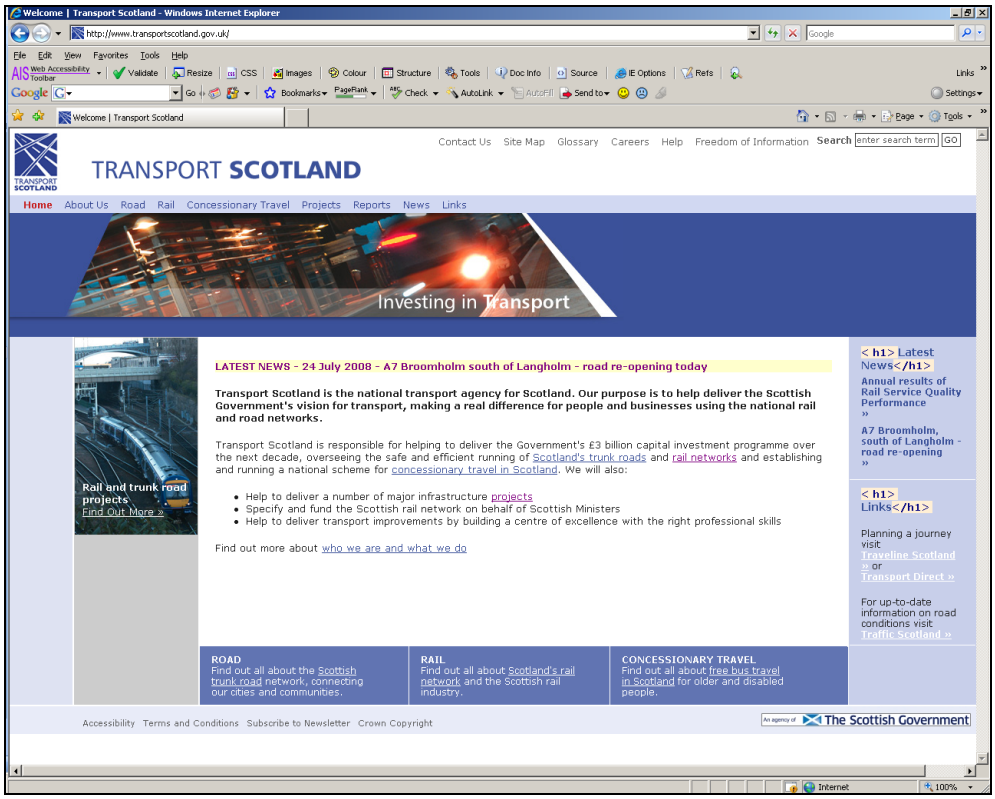


Fig 2.Homepage with headings marked

Recommended solution

Each page should have a single level 1, <h1>, heading as a minimum. This heading should be the main title of the page where relevant. Following on from this, if pages are divided up into subsections, each section should be given its own headings. Those immediately below the top level heading should be given H2 level headings, further subsections within the H2 section should be given H3 level headings and so on.

A good rule is that the main, H1, heading on a page should replicate the text in the title bar for the page.

In the case of the homepage, in the example above, there are two H1 headings used – for the 'Latest news' and 'Links' headings on the right hand side of the page.

In the case of the homepage, the H1 heading should be the main heading on the page – "Transport Scotland". The 'Latest News' and 'Links' headings could then be usefully coded up as H2 level headings.

Lists [ref: 3.6]

Why is it important? And who does it affect?

Marking up lists and list items correctly gives them a good structure and makes them semantically correct.

Issue: Items not specified as lists

Although a minor issue, which was apparent when viewing pages with CSS disabled, some of the lists contain several blank list items. See fig 3 below

Fig. 3 – Blank list items at the end of a list

Coding lists up gives screenreader users more information about a page. Before a list item is read out, the user would be informed that there was a list of items and how many items were in the list. If a list is reporting that there are 11 items in a list, but 2 of those are blank then the user may be confused.

Recommended Solution

Remove any blank list items.

New Browser Window [ref: 10.1]

Issue: Window opens without warning the user.

On pages **1, 3, 4, 13, 14, 18** there were links that opened into a new window without first warning the user.

Examples include the 'Traveline Scotland' or 'Traffic Scotland' links on the homepage.

Recommended solution

Avoid specifying a new window as the target of the link with the target="_blank" or target="_new" attributes of links, unless users know that a new window will open.

If this attribute is used, either indicate in the link text or in the title attribute of the link that a new window will be opening.

e.g. rather than

<img src="advert.gif">

use the alt attribute of the linked image to alert the user that the link will open in a new window:

<a href=" http://www.travelinescotland.com/"
target="_new">Traveline Scotland<a>

Links [ref: 13.1]

Why is it important? And who does it affect?

The destination of each link needs to be clearly identified. Screen reader users have the ability to list the links in a page and use this to navigate. If non-descriptive link text such as 'click here' is used, they have to either guess at the destination, or explore the page for contextual information. Additionally, if the same link text is used to link to different pages, this will also cause problems. Link text should be descriptive and unique.

If images are used as links, the screen reader will pick up the alt text as the destination of that link. If no alt text is provided, the screen reader will then read out the destination of the link – something that very often makes little or no sense at all.

Issue: link text not unique\readily identifiable

Page **6** has several graphical links, some of which have abbreviated alt text. E.G. FRC (Forth Replacement Crossing), however a screenreader user browsing a list of links on a page may just hear FRC, GARL etc. and be unaware of what these abbreviations meant.

Page **20** has a link titled 'Download', to allow users to download the Adobe Acrobat Reader. If read out of context, a user would not likely be aware what this link was relating to, however.

Recommended solution

For the issues on page **6,** it would be better to expand the abbreviations used as the image alt text, so a vision impaired user would hear the whole text, rather than just the abbreviation. E.g.

```
<a href="frc.html"><img src="frc.gif" alt="Forth
Replacement Crossing" /></a>
```

For the issue on page **20**, a more descriptive link phrase should be used, so rather than "download" use

```
<a href="adobeDownload.htm">Free download of Adobe
Acrobat</a>
```

Applets & Scripts [ref: 6.4]

Why is it important? And who does it affect?

Users of older browsers, or assistive technology, that don't support JavaScript.

Issue: Page contains mouse only event handlers

On page **17** there are a series of list boxes that all take the user to a new page automatically when they choose a link from the selection. This is achieved using the JavaScript onChange event handler.

This would cause a problem for any keyboard only users, who may be unable to use the mouse. If they tabbed around the webpage, and tried to scroll through the list of available options in the list boxes, the onChange event handler would automatically take them to a new page before they could properly browse the list.

Recommended solution

Use only device independent device handlers, or ensure that all devices are catered for. E.g. if the OnClick event handler is used, also use the OnKeypress event handler to cater for keyboard users.

In this case, the onChange event handler should not be used. Instead, remove the onChange event handler, and include a go button next to each list box. This allows a user to browse through the list of available options before selecting one. Once they have chosen, they can press the "Go" button as a separate action. This also ensures that the drop down lists are accessible to users who may not have JavaScript enabled.

Appendices

Accessibility Pages

Properly Labelling Graphics

Specialist Access Methods

Accessibility Glossary

Accessibility Pages

It is recommended that your homepage feature a very prominent link to a set of pages describing various ways in which a visitor can improve their access to your site. This link could be called something like "Accessibility and User Preferences". Offering such a service would be a public statement of your commitment to "inclusivity".

A visitor who has had their experience of your site facilitated as a result of being able to optimise the interface would also have their entire computer usage improved.

Such a set of pages could comprise all or a selection of the following:

- Instructions on how to change the text size within the commonly used browsers (e.g. IE, Netscape and Opera). If you have specified absolute and not relative font sizes then these instructions would need to include how to override them
- Instructions on how to change text and background colours within the commonly used browsers
- Instructions on how to change the system theme/colour scheme within Windows
- Instructions on how to set the screen resolution to 800x600 for easier viewing within Windows
- Instructions on how to tune the response of the mouse (e.g. acceleration and double-click speed)
- Instructions on how to tune the response of the keyboard (e.g. acceptance delay, key repeat rate and sticky keys)
- Information on a core range of specialist software, and how it can improve access for those experiencing difficulties using your site. Links to demos could be included
- A list of useful links to other sources of on-line information on disability and IT

Please note that AbilityNet has put together such a set of accessibility and user preferences pages that can be co-branded with your organisation and linked to from your home page. These pages can either be hosted on our servers or your own.

This service is offered free of charge. To see how the pages would appear and to review their content please visit www.abilitynet.org.uk/myweb

Site Help Section

In the general site help section of your site you may also want to include:

- A general summary of the site structure and navigational scheme
- A listing of the primary navigational links' access keys (if you have implemented them)
- An invitation to feed back any comments or questions specifically on accessibility and usability issues

  Contact details for support/help with difficulties in using the site

Properly Labelling Graphics

The very first checkpoint in the W3C guidelines (1.1) states:

> *"Provide a text equivalent for every non-text element (e.g., via "alt", "longdesc", or in element content). This includes: images, graphical representations of text (including symbols), image map regions, animations (e.g., animated GIFs), applets and programmatic objects, ascii art, frames, scripts, images used as list bullets, spacers, graphical buttons, sounds (played with or without user interaction), stand-alone audio files, audio tracks of video, and video. [Priority 1]"*

Often it is quite easy to decide what label to give a picture or graphic on your web page, but sometimes it is not. Below are some recommendations of best practice.

Pictures or Photographs

Pictures or photographs are quite straightforward. For example, the picture on your news page showing a recent launch of a new product should have an alt tag describing briefly what the picture is about. For example:

> **<img src="widget.jpg" alt="Widget Deluxe, a new product launched this month">**

Because blind visitors relying on speech output are not able to scan through a page or be as selective of what they read as others can be, every opportunity should be taken to minimise what they have to listen to. Hence alt tags should be as concise as possible.

You do not need to include the words "Picture of…" in an alt tag. All visitors who are not actually able to see that there is a picture there are informed of the presence of graphics by their access technology or text browser. For example, a blind visitor using speech output (or screen-reading) software) may hear "Graphic - Widget Deluxe, a new product launched this month" and so are made aware that this is a picture.

Graphical Links and Imagemaps

Many web pages include graphics as links to other pages or parts of the page, or as image maps (graphics that have multiple "hot-spots" that link to multiple pages). Whilst the use of proper text for links is preferable (as it can reflect a user's preferred size and colours) having appropriate alt tags on graphical links is vital. Without them, the link is as good as broken for the screen-reader or text browser user.

Missing or unhelpful alt tags on graphical links and imagemaps is the most common, and most serious, accessibility issue encountered on the internet. It is both an easy issue to remedy and the cause of great difficulty for some visitors to many websites on the internet.

Similarly to the case above, the alt tag to a link does not need to include the descriptive text "Link to…" as the user's access technology will inform them that it is a link.

Graphs and Charts

Usually a picture that represents a graph or chart conveys a significant amount of information. In this case an alt tag would not be suitable.

The best known and most well-supported method of providing such information in a textual format that will be accessible to those using access technologies is to provide a “D” link.

A “D” link is simply a capital “D” placed at the bottom right corner of the image that is a link to a separate page that contains a full description of the contents of the image. The page should also contain a link back to the original page (preferably with a “#” reference to the exact part of the page where the image was located).

For example, on the page containing the chart:

> **<img src=”chart.gif” alt=”Chart showing the yearly figures of 2002”>**
> **D**

And the link on description.htm back to the original page:

> ** Go back to previous page**

Cosmetic Graphics

Often graphics are used as minor embellishments to the page. For example, a bullet pointed list may use graphics for the bullet points instead of HTML mark-up, or an arrow may draw attention or emphasise an item of text.

In these cases it is important to give them a short, concise, alt tag (for example alt=”Bullet” or alt=”Arrow”). Without these alt tags some meaning or emphasis would be lost to some visitors.

Insignificant Graphics

Other graphics convey no important information at all. These include invisible spacer graphics used to govern layout, and all graphics that are simply flourishes (a sub-divider between menu items, for example).

It is important to ensure that access technologies ignore these graphics as they add nothing to the meaning of the page and would only cause unwanted “clutter”.

> Some web pages label spacer graphics with alt=”spacer”. This is highly inadvisable as they cannot be made to be ignored and will only serve to be very annoying to some visitors (especially in cases where there are several dozen on every page).
>
> Some organisations advise the use of an asterisk (alt=“*”). This practice is very widespread but also has problems (see below).

The best practice is to use a null alt tag of alt=”” on all images that do not convey important information.

- When graphics are labelled with a null alt tag no tooltip appears in Internet Explorer or Netscape when the graphic is hovered over with a mouse.
- With a “*” alt tag a tooltip of "*" appears in both Internet Explorer and Netscape

- People with little or no vision may be using screen-reading software (software that speaks back to them or sends information to a Braille display) or a self-voicing web browser. Hal (a commonly used screen-reader package) does not ignore graphics labelled with the "*" alt tag (i.e. alt=”*”) and announces "Bitmap star"
- HPR and pwWebSpeak (two commonly used self-voicing web browsers) also do not ignore the "*" alt tag and announce "Image star"
- All screen-readers and self-voicing web browsers completely ignore graphics labelled with the null alt tag (alt=""), with the exception of pwWebSpeak which simply announces “Image”.

A null alt tag of alt=”” will not cause any issues with the automated checking tools you can use to check your website.

Specialist Access Methods

There follows, for your information, a summary of the various methodologies and technologies used by those with disabilities in accessing pages on the web, with design recommendations to enhance accessibility/usability.

Mouse Users

Many individuals have no effective access to the keyboard. They may be using an on-screen keyboard to input data, but their primary method of access is some sort of mouse equivalent device.

The design issues that concern such a group of users in accessing on-line material is as follows:

- Make graphical links and clickable areas a decent size
- Avoid graphical or text links in close proximity
- Avoid time-dependent functionality
- Link to a page explaining how to tune the mouse response (see the "Accessibility pages" previously described in this report)

Keyboard Users

Some users rely almost entirely on the keyboard for their access. For example, those using a mouth stick, screen-reading software (see below) or switch access. Switch access entails pressing a switch (this could be with any part of the body, with the blink of an eye or by making a noise) to select a key from an on-screen keyboard.

These users would benefit from:

- Limit the number of links on a page
- Define a sensible tabbing order within links and forms
- Use "Access Keys"
- Avoid time-dependent functionality
- Link to a page explaining how to tune the keyboard response

Voice Recognition Users

These packages are very powerful, and very complex. They can offer effective access to web pages by voice given sufficient computer processing and memory capability, a trained dictation technique and knowledge of the product and on-going support. The two main competitors in this field are Dragon Naturally Speaking and IBM ViaVoice. Of the two families of products the Dragon range incorporates a higher degree of "hands-free" capability (with the only truly hands-free package being the top level Dragon product, "Naturally Speaking Professional").

Voice recognition users move through the document with verbal commands. To click a link using voice recognition software the user must say all or any part of a hyperlink, or the alternative text to a graphical link. Page design issues for voice recognition users include:

- Choose text for hyperlinks with care and avoid repetition
- Ensure all graphical links are labelled with corresponding text
- Avoid multiple forms on a page

Cognitive Difficulties and Dyslexia

Some users may have difficulty in reading text, may become confused by complex page layout or navigation scheme, or have difficulty in filling out forms.

Simple text to speech software (e.g. Texthelp or Readplease 2002) is often used by those with a literacy difficulty or dyslexia to reinforce their reading of the text (Texthelp offers additional functions to help with confusable words and word spelling). The issues with accessing web pages and other material are common throughout all text to speech packages (including those magnification software packages with additional speech output mentioned above). No one package will offer more effective access than another.

To improve access for this group you should:

- Have consistent navigation methods and use non-graphical sitemaps and breadcrumb trails
- Ensure consistent and uncluttered page layout
- Ensure that text is concise, easy to understand and jargon-free
- Use short paragraphs with sufficient white space
- Limit new points to one per paragraph
- Use a clear non-seriffed font
- Link to a page explaining how to change colours and font sizes

Visual Impairment and Colour-Blindness

Many users have difficulties seeing a normal computer screen. Web pages can be cluttered, with small text in low contrast colours. Those with colour blindness have difficulties with certain colour combinations that appear to offer good contrast between text and background.

There is much that can be done within the browser and operating system to improve access for this group. However, for those with a more severe impairment, (commonly classed as moderate vision impairment) magnification software packages (such as Zoomtext Extra, Lunar or MAGic) can help.

These packages are all very similar in their functionality and the implications they present in accessing web pages. Hence no one package will give more effective access than another. However, Zoomtext Extra and MAGic have versions that can offer some speech output as well, which may improve access for some individuals.

Magnification software magnifies the full screen image to the user's desired level. The user cannot see the entire screen at any time, but rather a proportion dependant on the level of magnification being used (e.g. at 3x magnification the user sees a ninth of the full screen image).

The user moves the mouse around to "drag" the viewable area to different parts of the screen and clicks on links and forms in the usual way.

To offer best access for those with a visual impairment, magnification software users and those who are colour-blind:

- Ensure consistent and uncluttered page layout
- Avoid using graphics for text
- Choose colours that ensure sufficient background and foreground contrast
- Avoid using red/green and blue/yellow text/background combinations
- Don't use colour alone to convey information
- Use a clear non-seriffed font
- Ensure all font size definitions are relative and not absolute
- Link to a page explaining how to change colours and font sizes (see the "Accessibility pages" previously described in this report)

Screen-Reader Users

Screen-reading software allows a user with no useful vision to use a computer "eyes-free". It is much more sophisticated than text to speech software which simply adds speech feedback to reinforce what the user sees and is limited to speaking data that can be pasted to the clipboard.

The most popular screen-reading packages are Jaws, Window-Eyes and Hal. They all encounter similar problems when accessing a web page, with Jaws and Window-Eyes arguably offering the most sophisticated access to more complex web pages. IBM's Home Page Reader is a self-voicing web browser, which also offers comparable access.

No screen-reader user can access embedded applets or dynamic presentations such as Flash.

Here are some of the design issues to consider for this group:

- Avoid numerous navigational links which are repeated at the top of every page
- Ensure all images have alt tags - especially links
- Avoid using graphics for formatting purposes that may be spoken
- Choose text for hyperlinks with care and avoid repetition
- Position labels in forms to the left or above the control
- Offer an alternative to Flash and Java applets

Accessibility Glossary

Accessibility (web) - Designing sites so as many people as possible can access them effectively and easily, independent of who they are or how they access the web.

Alternative Text (ALT Text) - Descriptive text attached to any non-text elements such as images, movies and animations on a web page written in HTML. It is particularly important for blind web users who use assistive technology called screen readers to make sense of a page.

Assistive/Adaptive Technology - Computer software or hardware that makes it possible for people with disabilities to access computer systems they otherwise not have access to with standard computer equipment. Examples include screen readers and magnifiers, closed captioning, alternative keyboards and mice.

Cascading Style Sheet (CSS) - A separate file linked to a web page that contains the rules for how the page should look in terms of colours, font styles and size and layout.

Disability Discrimination Act (DDA) - The legislation in the UK that covers the rights of disabled people. The section of the act on the provision of goods and services includes the requirement that websites should be made accessible.

Extensible Hypertext Markup Language (XHTML) - This is an updated version of HTML, which uses more rigorous standards and rules to make better structured and accessible web pages.

Flash - Multimedia technology developed by Macromedia used for web animation and often used to build websites with rich dynamic content. Historically has not been very compliant with Adaptive technology but with each new version the accessibility features improve.

Frames - A feature of HTML that allows a page to be divided into two or more separate windows. If the frame does not have a <title> element, or the <title> element is not meaningful this can cause accessibility issues.

HyperText Markup Language (HTML) - The standard markup language used to create web pages.

JavaScript - A scripting language commonly used on web pages. It has many uses, including validating fields in a form, or writing information to the user's screen. Adaptive technology such as Screen readers don't always support JavaScript which why its use is an accessibility issue

Lynx - A text only browser that is popular with people with disabilities and those in low bandwidth areas.

Screen Reader - Software that reads the content of a computer screen aloud. Screen readers can only interpret text content, so all graphic and multimedia must have alternative text descriptions using ALT text, captions, transcripts, or other methods.

Section 508 - This is a common name for Section 508 of the Rehabilitation Act. This is an amendment to a US law that basically says all Electronic and Information Technology purchased or developed by the US Government must be accessible to people with disabilities.

Spacer Images - also called spacer gifs. These are small transparent images placed on a page, usually in a table used for layout. They help to place text and images on the page for a good visual effect.

Usability – Determines how easy a product is to use. It has been defined as: "the effectiveness, efficiency and satisfaction with which a specified set of users can achieve specified goals in particular environments".

World Wide Web Consortium (W3C) - An international consortium of companies and organisations involved with the Internet and the World Wide Web, responsible for maintaining web technology standards, such as HTML and CSS.

Web Accessibility Initiative (WAI) - Started by W3C and its members, it addresses web accessibility issues.

Web Content Accessibility Guidelines (WCAG) - These are the guidelines built by the W3C/WAI to address issues in building accessible web pages.

Validation - Each web page should conform to a specified standard (document type) which is normally placed in the web page code, if when checked with a validation tool the page passes the standard it said to be valid. The benefit of valid pages is that they work better/more reliably with web browsers and a range of adaptive technology used by disabled people.