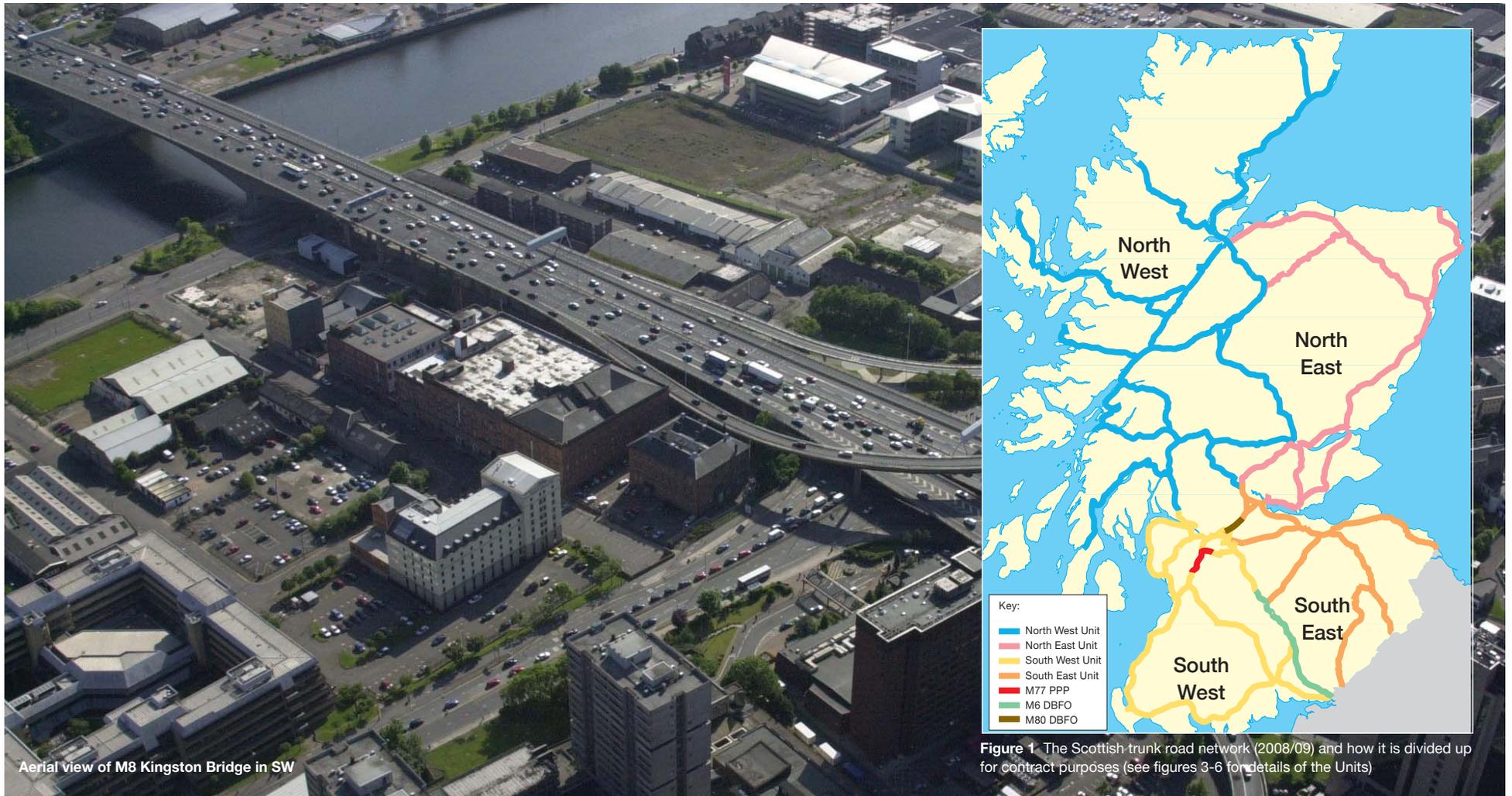


# The Performance Audit Group's Annual Report 2008/09

An independent public report on Scotland's trunk road maintenance

September 2009







## Foreword

Welcome to the Performance Audit Group's annual report on Scotland's trunk road maintenance in 2008/09.

This report summarises the extensive work carried out by our experienced multi-disciplinary team of specialists, led by Halcrow, in association with PricewaterhouseCoopers. Our role is to audit, monitor and report on the performance of the Operating Companies in managing and maintaining the Scottish trunk road network. We carry out this work on behalf of our client Transport Scotland, who is committed to managing and maintaining the network.

All parties work together with the aim of raising standards and help Transport Scotland:

*"... to deliver an efficient, cost-effective and environmentally sustainable transport system in Scotland which will help deliver the Government's Purpose of increasing sustainable economic growth ..."*

Transport Scotland's Corporate Plan 2008 - 2011

The objectives of our team are to:

- Ensure the needs of road users are met.
- Enable effective management of the trunk road asset.
- Facilitate continuous improvement.
- Make the most of public resources by delivering value for money.
- Encourage sustainability and reduce the impact on the environment.

This reporting year has seen the Operating Companies continuing to improve their service delivery. This was coupled with proven efficiency savings against a background of reduced budgets.

The constructive working relationships between Transport Scotland, Performance Audit Group and the Operating Companies continue to strengthen, resulting in further innovations and shared goals.

This is our seventh and final Annual Report under Halcrow's current appointment as the Performance Audit Group. The role is currently being tendered by Transport Scotland.

Our team is immensely proud of its contribution over the last seven years in bringing forward significant sustained improvements in the management and maintenance of Scotland's trunk roads.

We trust you find our report clear, comprehensive and informative.



Donald Bell, Project Director  
Performance Audit Group  
Halcrow Group Ltd

*Donald Bell*  
September 2009



A68, Soutra Hill in SE



## Executive summary

Overall, the Operating Companies (OCs) carried out maintenance of the network well. Relationships between Transport Scotland, OCs and Performance Audit Group (PAG) continued to be positive, with all parties working together to resolve issues and raise standards.

This was the second year BEAR has operated the trunk road maintenance contracts in North East (NE) and South East (SE). Scotland TranServ and Amey were in their third year of these contracts in North West (NW) and South West (SW) respectively.

There was continued substantial investment by Transport Scotland in managing and maintaining the trunk road network, although the budget was 22% less than the higher than average funding in the previous two years. Overall, spend was broadly in line with budget, with overspends in NE, SE and SW being partly off-set by a slight underspend in NW.

As with last year, efficiency savings of around £19m were delivered by these contracts compared with the previous arrangements. The OC's systems for financial control were robust.

Traffic management across the network improved further on the already high standards. There was excellent performance by the OCs in reducing delays and minimising the impact of roadworks, with 99.3% of the network being available to road users throughout the year.

The OCs reported strong performance in carrying out safety and detailed inspections on time. The OCs are now fully utilising the routine maintenance management system (RMMS), following resolution of issues identified in 2007/08, although there is room for improvement by Amey in SW in accurately recording inspection data.

BEAR in NE and SE performed well in repairing Category 1 defects on time, whilst there is potential for improvement by Scotland TranServ and Amey.

Cyclic and reactive maintenance was generally performed well by BEAR in NE and Amey in SW, with scope for improvement by the other two OCs. Grass cutting by all OCs generally progressed well, particularly in NE and SW, although early season work was slow.

The OCs completed their programmes of structures inspections on time and performed well in carrying out their cyclic and structural maintenance of structures.

Amey in SW successfully delivered its programme of statements of intent (SOI). Improvement is required by the other OCs in managing their respective SOI programmes.

All OCs continued to develop sustainable initiatives and working practices during the year, including trialling the carbon calculator developed by Halcrow for Transport Scotland.

The standard of workmanship by the OCs, their sub-contractors and works contractors was generally good. Operations and works contracts were in general well supervised by the OCs. The tendering process for works contracts was managed well.

The OCs' performance in delivering their winter service was generally good. The winter period was the coldest it had been since 2000/01, although there were fewer road closures due to winter weather than in previous years.



# Executive summary

Emergencies were responded to very effectively by all OCs. BEAR in SE and Amey in SW dealt well with landslips/ embankment collapses and a major diesel spill respectively.

The OCs continued to operate their quality and environmental management systems successfully, demonstrating continual improvement. Health and safety systems run by all the OCs continued to meet the requirements of the contract, with the OCs showing a highly responsible attitude to health and safety.

BEAR in NE and Scotland TranServ in NW delivered excellent performance in resolving issues promptly as they arose, with no remedial notices being issued.

In SE, BEAR was slower in closing out issues, with one remedial notice issued and closed out quickly.

Amey in SW delivered fair performance in resolving issues. One remedial notice was issued, fewer than the previous year, and remains open.

## Frequently asked questions

### What is the Performance Audit Group (PAG)?

Halcrow, working in association with PricewaterhouseCoopers and Scott Wilson, was re-appointed through competitive tendering by Transport Scotland as PAG for a second seven year term from December 2002. Halcrow and PricewaterhouseCoopers monitor performance on the four Units. Scott Wilson's role in PAG is primarily to monitor the M6 DBFO project. Further sub-consultants with a support role include: TRL, Tony Ham Insurance Brokers and the University of Dundee.

### What is PAG's role?

PAG audits, monitors and reports on the financial, technical and performance aspects of the OCs to a plan agreed with Transport Scotland. PAG also reviews payment requests from the OCs and carries out inter-Unit comparisons and value for money investigations at the request of Transport Scotland.

### What is a trunk road?

A trunk road is a road considered by the Scottish Government, through its agency, Transport Scotland, to be strategic to the national economy. All motorways and some A-roads are designated as trunk roads (see figure 1).

### Are trunk roads managed and maintained in a different way to other roads?

Yes, trunk roads are the responsibility of and funded by the Scottish Ministers. As such they are managed by Transport Scotland, maintained by the OCs and monitored by PAG. Local authorities are responsible for managing, maintaining and monitoring non-trunk roads.

### What is Transport Scotland?

Transport Scotland is the Scottish Government's national transport agency responsible for helping to deliver the Government's £3 billion capital investment programme over the next decade, overseeing the safe and efficient running of Scotland's trunk roads, rail networks and concessionary travel scheme.

### What are Transport Scotland's responsibilities for trunk roads?

Transport Scotland is responsible to the Scottish Ministers for overseeing the management and maintenance of the trunk road network. To assist with this, it employs OCs, works contractors, concession companies and PAG.

### What are OCs?

The OCs are responsible for delivering the management and maintenance of the trunk road network in each Unit, working under contract to Transport Scotland. During the reporting year 2008/09, the OCs for each Unit were: BEAR for NE and SE, Scotland TransServ for NW and Amey for SW.

### What do the OCs do on the network?

The OCs oversee, coordinate and undertake cyclic and routine maintenance, winter service and emergency response. In addition, they undertake structural road maintenance, bridge strengthening and maintenance, road structures inspection, road safety and minor improvement schemes.

## Frequently asked questions

---

### What else do the OCs do?

The OCs also oversee and coordinate maintenance works carried out by contractors and coordinate works by utility companies (statutory undertakers).

The OCs:

- undertake day-to-day management of the Unit
- provide professional and design services
- carry out surveys, inspections and supervision
- manage their allocated budgets
- report to Transport Scotland.

### What work is not done by the OCs?

Some maintenance and information management services carried out on the network are not the OCs' responsibility.

These include:

- Maintenance of M74 from junction 12 to the Scottish border; this is the

responsibility of Autolink under the terms of the M6 DBFO project.

- Maintenance of M77 PPP project; this is the responsibility of Connect.
- Maintenance of M80 DBFO project; this contract started in mid March 2009 and is the responsibility of Highway Management (Scotland) Ltd.
- Maintenance of Traffic Scotland equipment such as variable message signs, emergency telephones, permanent speed cameras and associated cabling.
- Collection of traffic data and maintenance of counting equipment.
- Major trunk road improvements built by contractors appointed by Transport Scotland. Maintenance responsibility for these improvements is split between the contractor and the OC for a set period, up to five years, prior to full responsibility passing to the OCs.

This report does not include these other maintenance organisations.

### Where can I find out more about the management and maintenance of the M6 DBFO, M77 PPP and M80 DBFO projects?

For M6, contact:  
Autolink Concessionaires (M6) plc  
M6 DBFO Project Office  
Nethercleugh  
Lockerbie  
Dumfriesshire  
DG11 2SQ

For M77, contact:  
Connect M77/GSO plc  
Connect Roads Operations Centre  
Maidenhill Interchange  
Ayr Road  
Glasgow  
G77 6RT

For M80, contact:  
Public Liaison Office  
Highways Management (Scotland) Ltd  
11 Mollins Court  
Westfield Industrial Estate  
Cumbernauld  
G68 9HP

# Contents

<b>Foreword</b> .....	<b>2</b>
<b>Executive summary</b> .....	<b>4</b>
<b>Frequently asked questions</b> .....	<b>6</b>
<b>Overview</b> .....	<b>10</b>
1.1 Background.....	10
<b>Maintaining the asset</b> .....	<b>16</b>
2.1 Roadworks and traffic management .....	17
2.1.1 Coordinating roadworks .....	17
2.1.2 Safety at roadworks .....	18
2.2 Inspections.....	19
2.2.1 Safety inspections .....	19
2.2.2 Detailed inspections .....	20
2.3 Maintenance .....	21
2.3.1 Cyclic and reactive maintenance .....	21
2.3.2 Landscaping .....	24
2.3.3 Structures.....	25
2.4 Design.....	29
2.5 Improving safety.....	30
2.6 Sustainability.....	32
2.7 Planned maintenance .....	34
2.7.1 Operations .....	34
2.7.2 Works contracts .....	35

# Contents

2.8 Winter.....	38
2.9 Emergencies.....	43
<b>Ensuring delivery .....</b>	<b>46</b>
3.1 Management systems .....	47
3.2 Information systems.....	52
3.3 Continuous improvement.....	53
<b>Ensuring value.....</b>	<b>56</b>
4.1 Financial spend .....	57
4.2 Budget, orders and spend .....	58
4.3 Claims and commercial issues .....	60
<b>Performance at a glance .....</b>	<b>61</b>
<b>Glossary of main terms.....</b>	<b>63</b>
<b>Acronyms.....</b>	<b>65</b>
<b>Useful websites.....</b>	<b>65</b>



# Chapter 1 Overview

## 1.1 Background

### The Scottish trunk road network

The network is 3,115km long, excluding M6 DBFO, M77 PPP and M80 DBFO. It contains a total of 5,660 structures, including 1,902 bridges and footbridges.

It is divided into four geographic Units, NE, SE, NW and SW, each with its own contract, (see figure 1). Each of the four Units is managed and maintained by an OC (see figures 3-6). Figure 2 outlines the structure of these arrangements.

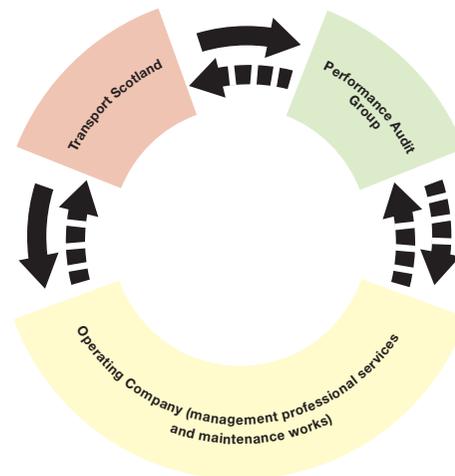


Figure 2 Structure of arrangements with the OCs

### The OC contracts

Since 1 April 2006, NW and SW have been managed and maintained by Scotland TranServ (a joint venture between Balfour Beatty and Mouchel) and Amey, respectively. These contracts will be in place until at least 2011.

BEAR Scotland Ltd has been the OC for both NE and SE since 1 April 2007 and will be until at least 2012.

### The contracts' objectives

The contracts to manage and maintain the network were awarded by the Scottish Ministers, and focus on the following three objectives:

- Customer service – “to enable a ‘customer oriented’ approach to be further developed in the way roads are managed and maintained.”
- Value for money – “to achieve the maximum efficiency in the use of the substantial sums of money expended on the maintenance of the network.”

- Effective management – “to encourage innovation and skilful management to maximise trunk road capacity and achieve the best use of the network.”

The contracts also aim to encourage:

- Flexibility – “to accommodate changes to the trunk road network.”

### Performance ratings

PAG has introduced a star rating system to assist in benchmarking OC performance. These performance ratings have been applied throughout the Annual Report. The ratings used are:

- \*\*\*\*\* Excellent
- \*\*\*\* Good
- \*\*\* Fair
- \*\* Poor
- \* Unacceptable

A summary of these ratings can be found in the ‘Performance at a glance’ section on page 61.



# North East fact file



Figure 3 NE Unit

Managed and maintained by:  
BEAR Scotland Ltd.

BEAR's central office:  
BEAR House  
Inveralmond Road  
Inveralmond Industrial Estate  
Perth  
PH1 3TW

Total route length of NE: 622km.

Budget for maintaining trunk roads in NE this period: £28.6m.

Number of structures: 682.

Amount of precautionary de-icing material used: 23,164 tonnes.

Winter patrol length: 460km.



# South East fact file



Figure 4 SE Unit

Managed and maintained by:  
BEAR Scotland Ltd.

BEAR's central office:  
6A Dryden Road  
Bilston Glen  
Loanhead  
EH20 9TY

Total route length of the network in  
SE: 509km.

Budget for maintaining trunk roads in  
SE this period: £26.2m.

Number of structures: 697.

Amount of precautionary de-icing  
material used: 24,199 tonnes.

Winter patrol length: 344km.



# North West fact file



Figure 5 NW Unit

Managed and maintained by:  
Scotland TranServ

Scotland TranServ's central office:  
Broxden House  
Broxden Business Park  
Lamberkine Drive  
Perth  
PH1 1RA

Total route length of the network in NW:  
1,306km.

Budget for maintaining trunk roads in NW  
this period: £35.3m.

Number of structures: 2,363.

Amount of precautionary de-icing material  
used: 40,537 tonnes.

Winter patrol length: 696km.



# South West fact file

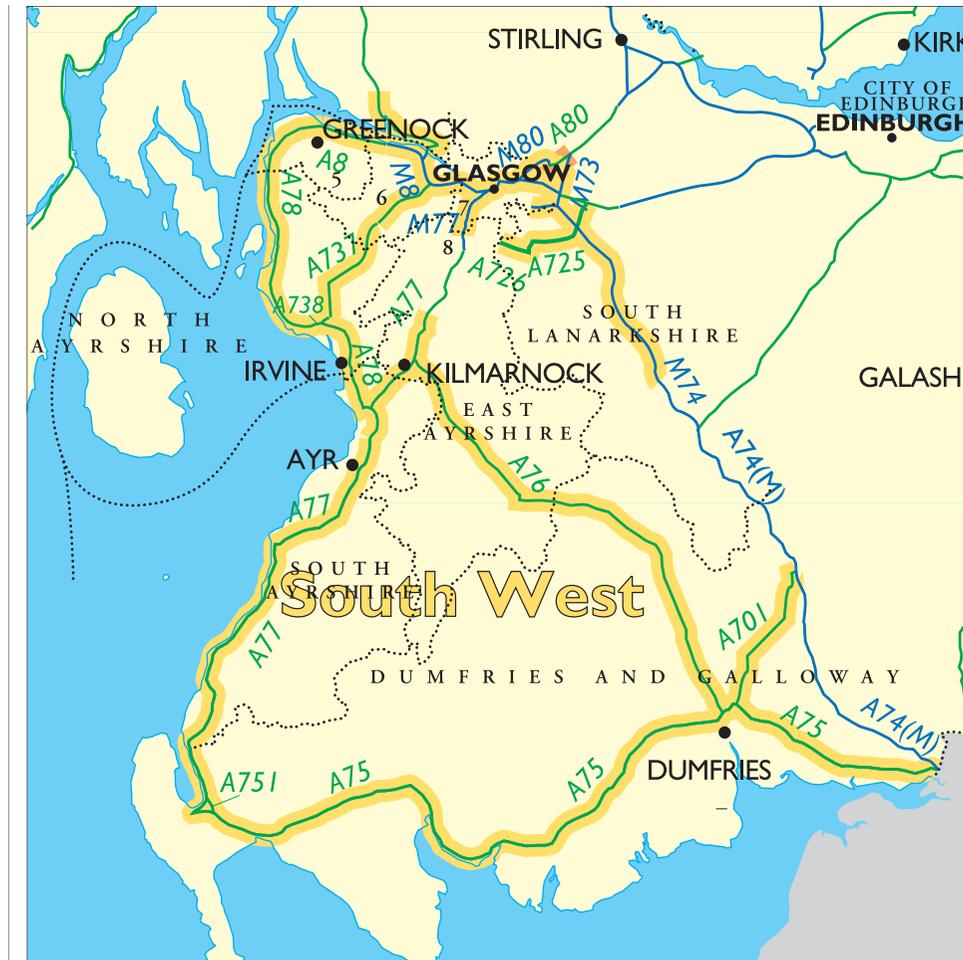


Figure 6 SW Unit

Managed and maintained by:  
Amey Infrastructure Services

Amey's central office:  
Langmuir Way  
Bargeddie  
Glasgow  
G69 7RW

Total route length of the network in SW: 678km.

Budget for maintaining trunk roads in SW this period: £42.1m.

Number of structures: 1,918.

Amount of precautionary de-icing material used: 12,523 tonnes.

Winter patrol length: 393km.



A84, Loch Lubnaig in NW

## Chapter 2

# Maintaining the asset

### Key points

#### Roadworks and traffic management

- There was excellent performance by the OCs in reducing delays and minimising the impact of roadworks.
- 99.3% of the network was available to road users throughout the year.
- There was further improvement by the OCs in the already high standard of traffic management across the network.

#### Inspections

- All OCs reported strong performance in carrying out their safety and detailed inspections on time.
- NE and SE performed well in repairing Category 1 defects on time. There is room for improvement by NW and SW.
- NE, SE and NW performed well accurately recording inspection data in the RMMS. There is room for improvement in SW.

#### Maintenance

- NE and SW generally performed well in carrying out their cyclic and reactive maintenance activities. There is room for improvement by SE and NW.

- Grass cutting was good in NE and SW and fair in SE and NW. Early season performance by all OCs was slow.
- All OCs completed their programmes of inspections and reports for structures on time, improving on performance last year.
- Performance in carrying out cyclic and structural maintenance of structures was generally good.

#### Design

- With the exception of SW where performance was excellent, there is room for improvement by the other OCs in managing their programmes for submission of SOIs.

#### Improving safety

- Strategic road safety and minor improvement schemes were successfully completed by the OCs.

#### Sustainability

- All OCs have developed sustainable initiatives and working practices.
- Although not required contractually, the OCs have taken steps to embed sustainability in their operations.

- The carbon calculator developed by Halcrow for Transport Scotland has been trialled by the OCs.

#### Planned maintenance

- The standard of workmanship by the OCs, their sub-contractors and works contractors was generally good.
- Operations and works contracts schemes were in general well supervised by the OCs.
- The tendering process for works contracts was well managed with out-turn costs controlled.

#### Winter

- The winter period was the most severe it had been since 2000/01, although there were fewer road closures due to winter weather than most previous years.
- The OCs' performance in delivering their winter service was generally good.

#### Emergencies

- Emergencies on the network were responded to very effectively by all OCs. In particular SE and SW dealt well with landslips/embankment collapses and major diesel spillage respectively.

## Maintaining the asset



### Traffic Management

Road workers are often out on busy trunk roads in all weather conditions. To protect them and keep road users safe, closing lanes to traffic is often necessary.

The OCs are required to keep the number of lanes closed to a minimum by completing as many tasks as possible within each closed area. They also plan works to be carried out during off-peak periods to reduce delays for road users.

The OCs provide this essential service and must ensure traffic management measures are safe and meet required national standards.

Temporary crash barrier systems are now frequently used on works contracts to protect road workers and guide traffic in contraflow situations. Temporary speed cameras and active speed indicating signs have also been used to improve safety.

### 2.1 Roadworks and traffic management

#### 2.1.1 Coordinating roadworks \*\*\*\*\*

In 2008/09, Transport Scotland's budget for trunk road network maintenance and improvement work was £132.2m. This investment was to provide a well maintained and safe network for road users. Figure 7 shows the resource budgets for the last six years and the average budget for the same period.

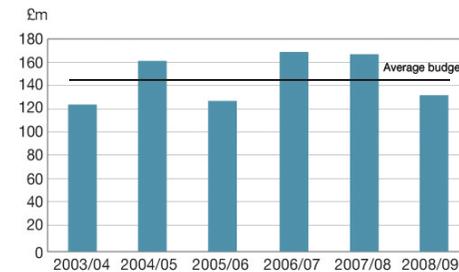


Figure 7 – Resource budget for maintenance and improvement

The delivery of Transport Scotland's investment programme is pivotal to a safe, efficient, reliable and sustainable network. The OCs are required to minimise the

disruption and inconvenience to all road users caused by essential maintenance by planning works, combining activities and co-ordinating with all stakeholders. All OCs continued to demonstrate good coordination of roadworks by holding regular meetings with local authorities, utilities and other stakeholders. They also continued to demonstrate excellent planning of traffic management to ensure the safety of road workers, whilst keeping disruption to road users to a minimum.

In 2008/09, there were 14,280 roadworks sites across the network, an average of 39 per day. Figure 8 shows the number of roadworks sites in each Unit during the year.

Unit	Number of roadworks sites
NE	4,099
SE	3,488
NW	3,132
SW	3,561

Figure 8 – Number of roadworks sites in 2008/09.

As in previous years, the OCs used a variety of measures to reduce delays and maintain network availability and safety during road works. These included:

- Traffic management measures such as contraflows, use of temporary vehicle restraint systems, lateral safety zones and convoy working.
- Advance notice of roadworks using media campaigns and placing of signs advising of start dates and durations of the works (see figure 9).
- Average speed cameras to reduce speeding through roadworks sites.



Figure 9 – Variable message sign in use on A83 in NW

A key performance indicator (KPI) is used to measure the OCs' performance in minimising the impact of roadworks, which is based on the length of lane closures and the amount of time lanes are occupied. This is used to calculate the overall percentage of the network available to road users.

## Maintaining the asset



Figure 10 shows there was excellent performance by the OCs in keeping the network open during the year. Overall availability was 99.3%, which is consistent with previous years.

Unit	KPI value	% Available
NE	128,859	99.20
SE	211,633	98.31
NW	54,304	99.77
SW	89,273	99.45
Total:	484,069	99.30

Figure 10 – KPI reporting road occupations and percentage of network available to road users

### Scottish Road Works Register

The Scottish Road Works Commission was established under the Transport (Scotland) Act 2005. The Commissioner oversees the planning and co-ordination of roadworks in Scotland.

The Scottish Road Works Register (SRWR) is used to plan and coordinate roadworks, and allows overall national performance to be monitored.

The Commissioner highlighted that all OCs had issues with the recording of road works in the SRWR. However, significant

improvement had been noted in the last quarter of the year. Transport Scotland and PAG will continue to work with the OCs to resolve some issues associated with the SRWR and seek further improvement in performance.

### 2.1.2 Safety at roadworks

#### Introduction

Across the network, there was further improvement in safety at roadworks, from an already high standard. National standards were generally met and PAG will continue to work with the OCs to ensure this is maintained.

It is encouraging that KPI 11 shows a significant reduction in the number of issues relating to safety at roadworks for all OCs (see figure 11).

There are still issues with safety at roadworks sites managed by public utilities, where the OCs have no direct control. This is an issue which the OCs continue to work towards resolving with active participation in the Roads Authorities and Utilities Committees.

There was work carried out, supported by several construction companies and Transport Scotland, to raise driver awareness of safety at roadworks.

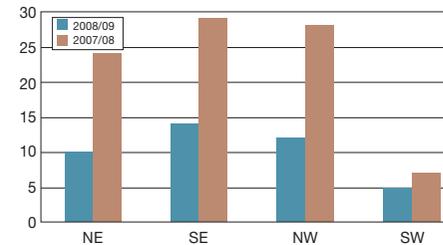


Figure 11 – Number of Observations made by PAG at OC's roadworks

#### NE – BEAR \*\*\*\*

Performance was good. The OC made use of convoy systems when working on narrow trunk roads.

#### SE – BEAR \*\*\*\*

Performance was good. The OC developed standard layouts for traffic management

#### NW – Scotland Transerv \*\*\*\*

Performance was good. The OC used convoy working where road widths were constrained. Occasionally, the OC used night-time road closures to

allow uninterrupted working across a whole carriageway.

The OC used mobile variable message signs to supplement the standard signing for single vehicle works such as grass cutting.

#### SW – Amey \*\*\*\*\*

Performance was excellent with high standards across the Unit. Convoy systems continued to be used by the OC where appropriate (see figure 12).



Figure 12 – Traffic management training taking place in SW

# Maintaining the asset



## Inspections

To deliver reliable journey times and ensure safety of the network, the OCs are required to implement inspection and defect repair regimes. Weekly safety inspections are carried out by the OCs on all routes. These ensure the most serious defects are identified and repaired quickly.

The most serious defects, identified by the OCs as Category 1 defects, must be made safe within 24 hours and permanently repaired within 28 days.

Details of all inspections, defects and repairs are recorded by the OCs in their RMMS. This is to provide a record of actions taken and to enable their performance to be measured and monitored.

## 2.2 Inspections

### 2.2.1 Safety inspections

During the year, the OCs reported strong performance in completing their safety inspections on time, as reflected in their KPIs (see figure 13).

Unit	2008/09	2007/08
NE	100%	100%
SE	100%	99%
NW	99%	100%
SW	100%	100%

Figure 13 – KPI2 – Safety Inspections

#### NE - BEAR \*\*\*\*

BEAR made good progress in ensuring safety inspections were accurately recorded in the RMMS. PAG identified an issue with the safety patrol programme resulting in a notice of non-conformance (NNC). BEAR reacted quickly and the NNC was subsequently closed.

#### SE - BEAR \*\*\*\*\*

Excellent progress was made by the OC in ensuring safety inspections and safety patrols were accurately recorded in the RMMS.

#### NW - Scotland TranServ \*\*\*\*

The OC made good progress in ensuring safety inspections were accurately recorded in the RMMS. PAG identified an issue with the rock patrol programme resulting in a NNC. Scotland TranServ addressed the issue and the NNC was subsequently closed.

#### SW – Amey \*\*

Amey’s performance in ensuring safety inspections and safety patrols were accurately recorded in the RMMS was poor. PAG also identified an issue with the safety patrol programme resulting in a Notice of Non-confirmation (NNC). Amey’s performance subsequently improved, leading to the NNC being closed. This will continue to be monitored by PAG

### Repair of Category 1 defects

As a result of issues with the RMMS, the OCs derived their KPIs from other sources. These issues were resolved towards the end of the year, and the OCs will report future KPI performance using the RMMS. This will continue to be monitored by PAG (see figure 14).

Unit	2008/09	2007/08
NE	94%	96%
SE	97%	85%
NW	82%	65%
SW	78%	85%

Figure 14 – KPI1 – OC performance in repairing Category 1 defects

#### NE - BEAR \*\*\*\*

The OC has delivered good performance, although it has reduced slightly from 2007/08.

#### SE - BEAR \*\*\*\*\*

BEAR was the best performing OC, with excellent performance, having significantly improved from 2007/08.

#### NW - Scotland TranServ \*\*

Scotland TranServ’s performance improved significantly from previous years following the implementation of its action plan. However, there remains room for further improvement. This will continue to be monitored by PAG and Transport Scotland.

#### SW – Amey \*\*

Amey’s performance in repairing defects was unacceptable at the start of the year, resulting in an action plan being

## Maintaining the asset



implemented. This resulted in improved performance for the remainder of the year. However, overall performance was poor, with a continuing downward trend. There remains room for significant improvement.

Amey was also slow in entering repair dates into the RMMS resulting in a significant backlog of data and an action plan being implemented.

PAG and Transport Scotland will monitor performance very closely in the coming year for both these issues.

### 2.2.2 Detailed inspections

To maintain the condition of the trunk road asset, all OCs carry out routine maintenance activities, such as carriageway patching, white line replacement and landscaping works. To ensure that these works deliver value for money, the OCs record in the RMMS all defects found during detailed inspections of the network. This data enables schemes to be identified and justified based on priority and need.

All OCs reported strong performance in carrying out their detailed inspections. This is shown in the KPI results in **figure 15**.

Improvements have been made to the RMMS during the year, (see section 3.2), which will allow it to be used for future reporting of KPI 3.

Unit	2008/09	2007/08
NE	93%	93%
SE	100%	100%
NW	100%	90%
SW	92%	99%

**Figure 15** – KPI 3 - OC performance in completing detailed inspections

#### Spotlight - Annual carriageway detailed inspections \*\*\*\*

PAG monitored the accuracy of the annual carriageway detailed inspections carried out by the OCs. The accuracy of the data entered into the RMMS by the OCs was verified by PAG shadow inspections of the network.

The exercise confirmed the accuracy of detailed inspections recorded by all

OCs was generally good, but specific issues with the recording of defects were identified. All OCs have undertaken to update the training of their inspectors to ensure defects are accurately recorded in the RMMS.

#### Network referencing

The network is defined using a locational referencing system dividing each trunk road into a series of links and sections. Node markers installed in the road are used to delineate the start and end points of the links and sections.

PAG’s analysis of the data held in the OCs’ RMMS highlighted many network referencing issues which need to be resolved. To clarify and resolve these issues, PAG will host workshops with Transport Scotland and the OCs during 2009.

#### NE – BEAR \*\*\*\*

Performance was good. The OC implemented action plans to address missing node markers and provide accurate section lengths and location plans.

#### SE – BEAR \*\*\*\*

Performance was good. Action plans were implemented by the OC to address missing node markers and provide accurate section lengths and location plans.

#### NW – Scotland TranServ \*\*

Performance was poor, with no action plans being implemented. However, the OC raised concerns about the accuracy and completeness of the RMMS network referencing and submitted a proposal to re-survey the entire inventory. Transport Scotland is currently considering this proposal.

#### SW – Amey \*\*\*\*

Performance was good. Action plans were implemented to address missing node markers and provide accurate section lengths and location plans.

## Maintaining the asset



### Cyclic and reactive maintenance

The OCs are paid fixed monthly sums for doing all the required cyclic maintenance operations. To ensure value, it is therefore important to check the work is not only carried out, but is also to an acceptable standard.

Cyclic maintenance activities are tasks generally carried out at regular intervals and are necessary to keep the network operational, safe and tidy.

Examples include, gully cleaning, sign cleaning, grass cutting and removal of graffiti. Litter picking and channel sweeping are carried out by the OCs on motorways and special roads, but are the responsibility of local councils on all other trunk roads.

## 2.3 Maintenance

### 2.3.1 Cyclic and reactive maintenance

#### Safety fences, barriers and fencing \*\*\*\*\*

All OCs delivered an excellent service. Repairs were undertaken promptly and to a good standard, except to bridge parapets, where the sourcing of materials and sector scheme installations is still an issue that can cause delay.

#### Signing, signals, road markings and studs

**NE – BEAR \*\*\*\*\***  
An excellent service was provided in the replacement of hazard marker posts. Improvement could still be made to reducing the lag between the completion of road works and the laying of road markings, although this can be hindered by poor weather.

#### SE – BEAR \*\*

A comprehensive review of hazard marker posts is currently being carried out by the OC prior to commencing replacement during 2009 /10. The OC's performance will be monitored by PAG.

A substantial amount of sign maintenance awaits completion, however replacement programmes have been provided.

#### NW – Scotland TranServ \*\*

A NNC was issued and subsequently closed for failure to identify and replace these posts. Replacement of hazard marker posts has, as a result, now taken place on several routes. Improvement could still be made to reducing the lag between the completion of road works and the laying of road markings, although it is recognised this can be affected by poor weather.

#### SW – Amey \*\*\*

Overall, Amey's performance was fair. As in NW, a NNC was issued for failure to identify and replace hazard marker posts. The OC took prompt action to address this. Replacement of hazard marker posts has now taken place on several routes in accordance with the OC's action plan.

### Lighting

There was strong performance in all Units, particularly by BEAR in NE and Amey in SW.

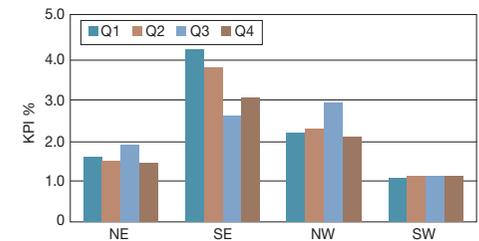


Figure 16 – Lamp outages

Figure 16 shows that against a target of 3% of lamp outages:

#### NE – BEAR \*\*\*\*\*

Excellent and consistent performance.

#### SE – BEAR \*\*\*\*

Good and improving performance.

#### NW – Scotland TranServ \*\*\*\*\*

Consistently excellent performance.

#### SW – Amey \*\*\*\*\*

Excellent performance was maintained.

## Maintaining the asset



### Sweeping, cleansing and litter

Litter picking and channel sweeping are carried out by the OCs on motorways and special roads, but are the responsibility of local authorities on all other trunk roads. The OCs liaise with local authorities to coordinate grass cutting and litter collection. Coordination has been variable across the network.

There also continues to be variable performance by local authorities in litter collection. This can be particularly evident after OC grass cutting operations, when shredded litter is sometimes visible.

Sweeping by local authorities is also variable and can result in drainage problems, including blocked gullies.

#### NE – BEAR \*\*\*\*

Performance was good. Motorway routes were generally swept and litter picked to a good standard.

#### SE – BEAR \*\*\*

Performance was fair. The OC's sweeping regime improved during the year, however litter collection remains an issue. This will

continue to be monitored by PAG and Transport Scotland.

#### NW – Scotland TranServ N/A

There are no motorways or special roads in NW. Therefore, local authorities were responsible for all sweeping and cleansing in the Unit.

#### SW – Amey \*\*\*\*

Performance was good. The removal of litter from motorway routes improved throughout the year, although some hotspots remain where further attention is required.

On sections of the Glasgow M8 corridor cutting back of vegetation and installation of hard landscaping resulted in a distinct reduction in the quantity of litter (see figure 17).



Figure 17 – M8 – Hard landscaping verge at J15 Townhead in SW

### Drainage, gullies and ironwork

During the year PAG undertook a review of cyclic drainage activities. (See Spotlight - Drainage).

#### NE – BEAR \*\*\*

Performance was fair, with some minor deficiencies identified in gully cleaning operations.

#### SE – BEAR \*\*\*

Performance was fair, with some programming and record keeping issues still to be addressed.

#### NW – Scotland TranServ \*\*\*

Performance was fair, with some minor deficiencies identified in ditch clearing operations.

#### SW – Amey \*\*\*\*\*

Performance was excellent.

## Maintaining the asset



### Spotlight - Drainage records

Cyclic maintenance activities are regularly undertaken by the OCs, and it is important there is an auditable trail of evidence to support these activities. The audit trail for cyclic activities should be kept in the RMMS.

Properly maintained drainage plays an important role in ensuring trunk roads operate effectively by removing surface water from carriageways. This reduces the risk to road users from flooding and helps prolong the life of the carriageway.

A drainage monitoring exercise was carried out by PAG during the year. The aim was to confirm all OCs were carrying out their contractual obligations in recording cyclic maintenance works.

The requirements for cyclic maintenance are to inspect and maintain gullies, catchpits, soakaways, drainage grips, oil separators, etc, on at least an annual basis, but more frequently if necessary. The OCs must record this in the RMMS.

#### Initial reviews (September – December 2008)

Reviews were carried out by PAG on several routes across the four Units. The

quality of records varied across the OCs and also between individual depots.

As a result of improvements made to the RMMS in the latter part of 2008/09, all OCs are now able to accurately record the drainage infrastructure and drainage maintenance activities.

All OCs were subsequently asked by PAG to ensure that inventory and cyclic maintenance was accurately recorded in the RMMS.

#### Follow up reviews (April – May 2009)

##### NE – BEAR \*\*

Based on the routes sampled, there was no evidence in the RMMS to show gullies had been cleaned. Improvement in record-keeping is required and will be monitored by PAG.

During the year BEAR trialled its Masternaught system on some gully cleaning vehicles. This provided a more detailed and robust record of gully cleaning activities and allowed additional information to be collected.

##### SE – BEAR \*\*

Records were reviewed and found to be incomplete. However, the available records enabled some checks to be made. Improvement in record-keeping is required and will be monitored by PAG.

##### NW – Scotland TranServ \*\*

Based on the routes sampled for the northern part of the Unit, the RMMS was not updated with all the appropriate records. Improvement in record-keeping is required and will be monitored by PAG.

##### SW – Amey \*\*\*\*

Based on the routes sampled, there was clear evidence in the RMMS to show gullies had been cleaned.

#### Summary

PAG will continue to monitor this important area closely in 2009/10.

## Maintaining the asset



### Landscaping

The OCs prepare landscape management and maintenance strategies, development plans and annual reports. These include details of the various landscaping activities undertaken such as grass cutting, weed control, control of vegetation and proposals for improvement.

Each year, the OCs submit these to Transport Scotland for review and discussion.

### 2.3.2 Landscaping

#### Grass cutting

Programming of the first grass cut of the season proved problematic to all OCs this year. Subsequently, the OCs were largely successful at maintaining the appearance of the network (see figure 18).

#### NE – BEAR \*\*\*\*

Overall performance was good. At the start of the year a NNC was issued and quickly resolved.

#### SE – BEAR \*\*\*

As in NE, a NNC was issued at the start of the year and subsequently closed out. From the second cut onwards, performance was fair with the general appearance of some areas falling below the required standard.

#### NW – Scotland TranServ \*\*\*\*

After a slow start, and following completion of training of its operatives, grass cutting performance was fair, with a few minor workmanship issues.

#### SW – Amey \*\*\*\*

Overall performance was good. Early

season performance resulted in a NNC being issued, which was quickly resolved.



Figure 18 – Grass cutting operations on the M74 in SW

#### Weed control

#### NE – BEAR \*\*\*

Performance was fair, improving on the previous year. The treatment of injurious weeds produced variable results.

#### SE – BEAR \*\*\*

As in NE, performance was fair. In the first half of the season there were issues with weed growth. However, the OC's performance improved in the second half of the year.

#### NW – Scotland TranServ \*\*

Improvement is required in the treatment of weeds. PAG will work with the OC to seek improvement in 2009/10.

#### SW – Amey \*\*\*

Performance was fair. The control of weeds improved from the previous year. Further improvement could still be made in the reduction of injurious weeds.

#### Controlling vegetation

#### NE – BEAR \*\*\*\*

Performance was good, with prompt treatment of vegetation obscuring signs.

#### SE – BEAR \*\*\*

Performance was fair, although some signs remained obscured by vegetation.

#### NW – Scotland TranServ \*\*\*\*

Overall, performance was good with prompt treatment of obscured signs and significant areas of shrub clearance and tree trimming and felling.

#### SW – Amey \*\*\*\*

Overall, performance was good. Amey commenced a programme of tree trimming and shrub tidying within the M8 corridor in Glasgow. This has improved the visual amenity and reduced the retention of litter in these areas.

## Maintaining the asset



### Maintaining structures

Under the contracts, the OCs must inspect structures at regular predetermined intervals and prepare programmes to maintain, strengthen or replace them. The OCs then design, procure and carry out works, either directly or by works contracts.

The term ‘structures’ includes bridges, culverts, retaining walls, sign gantries, high mast lighting and CCTV poles. Regular inspections are carried out at two and six yearly intervals.

Major bridges, such as Erskine, Skye, Friarton, Kessock, Kincardine and Ballachulish, have their own specific inspection and maintenance regimes.

The OCs are required to carry out cyclic maintenance tasks to structures each year.

Management and maintenance of the Forth and Tay bridges are not part of the OC contracts.

### 2.3.3 Structures

At the end of 2008/09, the OCs were responsible for managing 5,660 structures across the network on behalf of Transport Scotland. This is a slight increase on those managed the previous year.

Structures range from culverts carrying watercourses under roads to major bridges, such as the A87 Skye Bridge and M8 White Cart Viaduct. Small pipes carrying watercourses are not classed as ‘structures’. Of these structures, 1,902 are bridges or footbridges. In recent years, a significant number of sign gantries, including large variable message signs, have been installed across the network.

Unit	Bridges	Footbridges	Other structures	Total
NE	312	16	354	682
SE	312	12	373	697
NW	587	62	1,714	2,363
SW	552	49	1,317	1,918
Total	1,763	139	3,758	5,660

Figure 19 – Number and type of structures in each Unit.

A breakdown of the type and number of structures in each Unit, as extracted from the structures management system is shown in figure 19.

At the end of March 2009, responsibility for the management of 35 structures in SW and SE transferred from the OCs to the M80 DBFO project.

Allocation of the structures’ budget by Transport Scotland is based on network priority and a value management process that reflects the general age and condition of the structures, priority ranking and traffic volumes.

Structures spend in 2008/09 was £22.67m, representing 17.1% of the overall spend. This is a slight increase from the previous year.

A comparison of budget and spend for structures is given in figure 20, and shows spend was within 2% of budget.

Unit	Structures budget (£m)	Structures spend (£m)
NE	1.34	1.35
SE	2.45	3.31
NW	6.07	5.84
SW	12.56	12.17
Total	22.42	22.67

Figure 20 – Comparison of structures spend against budget

### Inspecting structures

One of the OCs’ major responsibilities is the regular inspection of structures to monitor and record their condition.

There are three types of inspections carried out by the OCs:

- Principal inspections – undertaken every sixth year
- General inspections – carried out every second year
- Superficial inspections – undertaken as part of other inspection and maintenance duties.

## Maintaining the asset



### Delivery highlight

#### Refurbishment of A68 Station Road Bridge Jedburgh, in SE

The operations to refurbish the A68 110 Station Road Bridge were split into two phases. The first phase was repairing the reinforced concrete of the bridge; and the second phase was the installation of a new waterproofing system to the existing arch.

A temporary bridge was installed that spanned over the existing structure. This allowed traffic to continue to use the A68 under temporary traffic light control whilst the majority of the essential maintenance operations were carried out. Without BEAR's innovative approach the A68 would have had to be closed for up to five weeks with a 50km long diversion around Jedburgh. The use of the temporary bridge resulted in significant benefits to the travelling public, residents and local business.

Only three closures, undertaken at weekends, were implemented for the installation, movement and removal of the temporary bridge. Operations were programmed to miss the main tourist season and in depth liaison was carried out with the local community, including a two day public exhibition prior to the scheme commencing. This helped to assure the local residents and business community that disruption to every day life would be minimal. This scheme has been put forward by Transport Scotland for a Historic Bridge and Infrastructure award.



In 2008/09, 603 principal inspections were carried out by the OCs.

The OCs must submit reports on these inspections to Transport Scotland and update the structures management system. If particular concerns are raised, then special investigations are carried out.

The inspection year runs from February to November in each calendar year. In 2008, all OCs provided an excellent service and completed their programmes of inspections and reports within this timescale. With the approval of Transport Scotland, a small number of inspections were carried forward to the 2009 inspection year, due to special access requirements, such as over railways. This is a significant improvement from last year, when all four OCs did not fully complete their programmes.

#### Structures management system

In February 2009, Transport Scotland introduced a new structures management system (SMS). This replaced the trunk road bridge database (TRBDb), which had been in operation since 1996.

The SMS required changes to the inspection and reporting regime. Additional information on the condition of structures is now required.

The implementation required careful management by Transport Scotland and the OCs. Training programmes on use of the SMS were undertaken by Transport Scotland, PAG and OC staff. Whilst skill levels in the new system are inevitably still developing as the OCs' go up the learning curve, the changeover was a success. Performance using the new SMS will be monitored by PAG in 2009/10.

#### Cyclic maintenance

The OCs carry out regular maintenance on structures, known as cyclic maintenance, during each annual period or as required. Many of the cyclic tasks aim to prevent deterioration of structures and delay the need for more expensive repairs. These include cleaning of expansion joints and drainage systems and clearing vegetation.

The performance of all OCs has improved significantly, and was generally good, with all completing their cyclic maintenance programmes. This is a significant improvement on last year.

## Maintaining the asset



During the year PAG carried out a monitoring exercise to assess structures cyclic maintenance performance. (See Spotlight- Cyclic maintenance of structures).

### Structural maintenance

The OCs design and implement structural maintenance and strengthening or replacement operations. These are either managed internally or, in the case of the larger value schemes, tendered as works contracts. This type of work includes:

- re-waterproofing of bridge decks
- resurfacing
- replacement of deck joints
- concrete repairs
- repainting of steelwork
- repair and replacement of accident damaged parapets
- upgrading and replacement of parapets at high-risk sites.

### NE – BEAR \*\*\*\*

BEAR's performance during the year was good. A number of schemes were completed including the replacement

and upgrading of parapets and safety fencing, replacement of deck joints and re-waterproofing.

### SE – BEAR \*\*\*\*

The OC's performance was good, although some schemes were affected by cost and time overruns.

The OC's management of the refurbishment of an old arch bridge at A68 Jedburgh was particularly good. As part of the contract a temporary bridge was installed to maintain traffic flow.

### NW – Scotland TranServ \*\*\*\*

A number of major schemes were undertaken during the year. These included completion of the replacement A82 Achnambeithach Bridge in Glencoe and upgrading two swing bridges over the Caledonian Canal. In addition, the main cables at A9 Kessock Bridge were recoated and several structures had waterproofing and joints replaced.

In general, Scotland TranServ's performance was good, although there were delays on two schemes.

### SW – Amey \*\*\*\*

During the year Amey carried out a major programme of repairs, refurbishment and repainting of structures. In particular, the repainting of two major steel structures across the M73 was successfully completed.

In addition, the commissioning of runway beams for the inspection gantry at A898 Erskine bridge and the M8 Bothwell Street off-ramp refurbishment were successfully completed.

Amey's performance in managing these schemes was good, although several were affected by time and cost overruns.

### Abnormal loads

The OCs performed well undertaking various delegated management functions on behalf of Transport Scotland. This included the coordination of routeing abnormal loads to ensure that structures can accommodate these large and heavy vehicles (see figure 21).



Figure 21 – 485 tonne transformer being transported to Longannet power station in NE



## Spotlight - Cyclic maintenance of structures

PAG undertook a monitoring exercise to assess the OCs' performance in carrying out cyclic maintenance of structures.

This exercise focused on bridges, underpasses, culverts and retaining walls.

### NE – BEAR \*\*\*\*

From the sample of structures visited, BEAR's performance was fair and undertaking cyclic maintenance was good and has improved from 2007/08. BEAR acknowledged there is room for further improvement, particularly in clearing detritus from bridge decks and cleaning drainage channels along bearing shelves.

### SE – BEAR \*\*\*\*

BEAR's performance was good and has improved from the previous year. Of the structures visited, cyclic maintenance was not always fully completed, such as when clearing vegetation adjacent to structures, not all debris was removed from site.

There is scope for further improvement in 2009/10 and this will be monitored by PAG.

### NW – Scotland TranServ \*\*\*\*

Structures visited were mainly short

span bridges over water. The main cyclic maintenance activities, such as vegetation and drainage clearance were carried out to a good standard (see figure 22).

The largest structures inspected were on A9, A828 and A87, where all required tasks were completed satisfactorily.

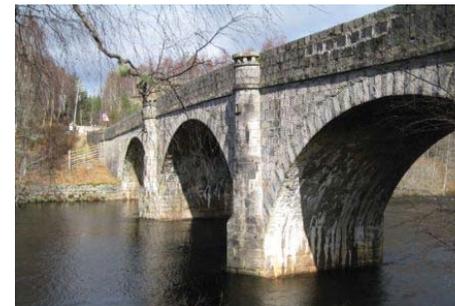


Figure 22 – A887 Torgoyle three span stone arch bridge in NW

### SW – Amey \*\*\*\*

Generally, cyclic maintenance was carried out to a good standard (see figure 23).

Some minor issues were identified, such as clearing of bridge deck expansion joints on a small number of structures. The OC subsequently completed these outstanding tasks.



Figure 23 – Bridge bearing at A75 Lincluden Bridge in SW

### Summary

The OCs' performance in completing their structures cyclic maintenance programmes has improved each year since the start of the 3G contracts.

There is still some room for further improvement and PAG will continue to monitor the OCs' performance.

## Maintaining the asset



### Bidding guidance for roads structural pavement maintenance

Transport Scotland's new "Bidding Guidance for Roads Structural Pavement Maintenance" was issued in March 2008. This was produced to assist with programming and prioritisation of schemes in the 3-year and 1-year programmes.

Completion of SOIs is a two stage process, with Transport Scotland's approval required for each stage:

- Inception SOI(i) which includes details such as location, extent of works and description of existing road condition.
- Scheme assessment SOI(sa) includes proposed treatments, whole life cost analysis and scheme cost estimate.

Transport Scotland hosted a series of technical workshops during July 2008 where all OCs presented their approach to new bidding guidance.

### 2.4 Design

The OCs prepare SOIs and value for money assessments to support their bids to carry out work on the network. SOIs include scheme justification, possible options, cost estimates and recommended treatment. The OCs submit bids with this supporting information to Transport Scotland to enable it to give approval.

SOIs and value for money assessments are required for:

- Roads structural maintenance schemes.
- General road and bridge repair and maintenance schemes greater than £50k.

#### 3-year and 1-year programmes

Each year, the OCs must submit a detailed 1-year programme with financial profiles and a 3-year programme to Transport Scotland for approval. Transport Scotland then issues sufficient orders for schemes to be undertaken by the OCs in the following financial year.

#### Submission of SOIs

##### NE – BEAR Scotland \*\*\*

Performance was fair. Issues of quality on operations schemes meant it took longer for

the approval process to be completed. These issues are now being addressed by the OC and will be monitored by PAG.

The OC submitted SOI(sa)s throughout the year, but the rate of input was slow, and only about a quarter of all 2009/10 SOI(sa)s were submitted by the end of March 2009.

##### SE – BEAR Scotland \*\*\*

BEAR's performance was fair. SOIs submitted were of satisfactory quality, with improvement evident as the year progressed.

The OC submitted SOI(sa)s throughout the year, although the rate of input was slow, with only about a quarter of all 2009/10 SOI(sa)s submitted by the end of March 2009.

##### NW – Scotland TranServ \*\*\*

Performance was fair. The OC produced consistently high quality SOI submissions. SOI(sa)s were submitted throughout the year, although only half of all 2009/10 SOI(sa)s due to be submitted by the end of March 2009 were received by Transport Scotland.

##### SW – Amey \*\*\*\*\*

Amey's performance was excellent with all

SOIs submitted of a high standard. In accordance with the new Bidding Guidance, the OC maintained a steady rate of SOI submissions throughout the year. This meant nearly all 2009/10 SOI(sa)s were submitted by the end of March 2009.

#### Spotlight - PAG scheme justification audits \*\*\*

The OCs are required to ensure any scheme proposed is fully justified in terms of priority, technical design, value for money and most appropriate treatment.

PAG carried out audits in each Unit during 2008/09 to investigate the OCs' design and decision making processes for works contracts. Overall, OC performance was fair. In general, the OCs implemented effective management systems related to scheme justification and design processes. However, some issues were identified such as record-keeping, value for money assessments and interpretation of site investigation results.

The OCs are taking actions to address these and PAG will continue to monitor progress.

## Maintaining the asset



### Safety improvements

Road safety improvements are developed and implemented to improve driving conditions for road users. These are taken forward by the OCs and can be either strategic road safety or minor improvement schemes.

Strategic road safety schemes typically include:

- Low cost treatments such as new signs and road markings
- More extensive measures such as new traffic signals and pedestrian crossings, anti-skid surfacing, new or improved lighting and the installation of passively safe roadside furniture.

Minor improvement schemes can comprise:

- Road re-alignments
- Junction improvements
- Strengthening of carriageway edges and widening roads
- Installation of safety barriers.

### 2.5 Improving safety

#### Strategic road safety schemes

Each year the OCs analyse accident data using a Moving Cursor Programme (MCP) provided by Transport Scotland. Detailed accident prevention studies are carried out at sites with more than three personal injury accidents. These studies result in the development of schemes for some sites and monitoring of other sites, with the occasional site where no further action is considered necessary.

The OCs also deliver road safety improvements in accordance with the Strategic Road Safety Plan. This identifies elements of the road environment likely to contribute to an increased risk of injury and initiatives to eliminate or mitigate them. These complement the works identified through the MCP.

Generally the OCs performed very well in identifying and progressing schemes with spend being in line with budget.

#### NE – BEAR \*\*\*\*

Various road safety measures identified across the Unit were subsequently

implemented, including some from previous years. Mass action plans, such as bend safety treatments, continued in 2008/09.

Signing improvement strategies continued with routes being reviewed for issues such as passive safety and sign clutter.

#### SE – BEAR \*\*\*\*\*

Mass action plans, such as improved roadside protection, continued in 2008/09. This initiative saw the implementation of sign post upgrades on a number of routes. Speed limit reviews and signing improvement strategies were undertaken on various routes in the Unit.

#### NW – Scotland TranServ \*\*\*\*

In 2008/09, strategic road safety expenditure was focused on implementing Route Accident Reduction Plans on a number of routes.

Studies were undertaken at a number of locations identified from the MCP and detailed designs were progressed.

#### SW – Amey \*\*\*\*\*

A significant number of schemes were progressed by Amey during 2008/09.

These included speed limit reviews, pedestrian crossing assessments and other road safety measures.

#### Minor improvement schemes

The minor improvement schemes programme consists of schemes that are of importance to Scottish Government commitments and those developed to address network needs. Generally, all OCs performed well promoting, preparing and procuring these schemes to programme and budget during 2008/09.

#### NE – BEAR \*\*\*\*

Minor improvements undertaken included A90 Finavon junction improvement. A number of other schemes were progressed through the feasibility and design stages.

#### SE – BEAR \*\*\*\*

Route Management Strategy Studies were progressed on A68 and A7/A6091. Two reviews were developed, one to assess the provision required to protect roadside hazards and the other sufficiency and longevity of the current central reserve protection.

## Maintaining the asset



### Delivery highlight

#### High friction surfacing and retexturing existing surfaces in NE

Many of the strategic road safety studies carried out in by BEAR identified the need for high friction surfacing or retexturing of the existing carriageway surface. High friction surfacing was introduced across the Unit mainly on the approaches to roundabouts and junctions.

Monitoring of the 'Trackjet' surface treatment site on the A96 continues. However, initial results look promising with a significant fall in damage only and injury accidents at this location since treatment.



Safety improvement measures comprised installing a new pedestrian crossing in Lauder town centre on A68 and safety barrier on A68 and M8, as part of a continuing programme to provide protection to identified accident sites.

Pedestrian facilities were upgraded to improve accessibility for all users. Carriageway realignment and junction upgrade schemes on A702 and A68 were progressed through design stages to meet current standards.

#### NW – Scotland TranServ \*\*\*\*

Two major improvement schemes started on site towards the end 2008/09. These were the A9 Carrbridge improvement, to provide dedicated overtaking for road users, and a junction improvement on A9 at Bankfoot. Scotland TranServ is progressing the design of two further schemes on A9 at Moy and Slochd, which will include dedicated overtaking lanes.

#### SW – Amey \*\*\*\*

Design and preparation for repairing the earthworks slippage at M73, Junction 2a, Gartcosh was undertaken by the OC, with works programmed to commence early in 2009/10 (see figure 24).



Figure 24 – Slippage at M73, Junction 2a, Gartcosh in SW

The OC is progressing the design of A77 Burnside improvement scheme. This scheme will upgrade the existing carriageway to provide dedicated overtaking for both northbound and southbound travellers. Amey has utilised the existing route corridor to minimise impact on agricultural land.

Specialist archaeological contractors have also been engaged to oversee the work since there is a high possibility of unearthing archaeological remains.

## Maintaining the asset



### Sustainability

An accepted definition of ‘sustainability’ describes development which meets the needs of the present, without compromising the ability of future generations to meet their own needs. Figure 25 shows the inter-relationships between elements of sustainability.

Although there are no specific requirements in the OC contracts, the issue of sustainability is being developed by all parties. This reflects one of Scottish Government’s key objectives to improve Scotland’s natural and built environment and the sustainable use and enjoyment of it by:

- valuing and enjoying our built and natural environment and to protect and enhance it for future generations.
- reducing the local and global environmental impact of our consumption and production, and
- live in well-designed, sustainable places where we are able to access the amenities and services we need.



Figure 25 – The inter-relationships between the economic, environmental and social elements

### 2.6 Sustainability

Each OC developed various sustainable initiatives and working practices.

All OCs contributed to workshops run by PAG/Halcrow with Transport Scotland to identify current practices and determine how to integrate sustainability into trunk road maintenance contracts.

Trials of a new carbon calculator, developed by Halcrow for Transport Scotland, have been completed by the OCs.

Although there are no contractual requirements for sustainability, the OCs are taking various steps to ensure they embed sustainability in their operations.

#### NE and SE – BEAR \*\*\*\*

BEAR appointed a sustainability champion, responsible for both NE and SE. Internal sustainability forums were set up where action plans for both Units will be established.

A BEAR sustainability workshop was attended by senior representatives from its shareholders Jacobs, Ennstone and

Ringway. Issues discussed included travel planning, product innovation, energy usage, waste minimisation, carbon calculation and pavement treatment options.

The ‘Greener Fleet’ module was added to BEAR’s Masternaught fleet management system. This will help the OCs to develop more fuel efficient processes by providing information on fuel usage and idling times.

Case studies are being examined by BEAR which should demonstrate potential for a reduction in energy use for street lighting.

In NE, as part of the carbon calculator trial, the OC carried out a study of the carbon emissions generated from the A90 Snabs to Star Farm structural maintenance scheme, where 3,000 tonnes of cold-mixed recycled base material was used. This was the first time this product had been used on the network and it resulted in substantial carbon savings.

Also in NE, a lean mix transverse crack repair method was used, avoiding the need for full depth reconstruction.

## Maintaining the asset



In SE, an LED traffic sign was erected as a trial on A68 at Pathhead. This uses less electricity than a traditional illuminated traffic sign and requires minimal future maintenance.

### NW – Scotland TranServ \*\*\*\*

Following the successful introduction in 2007/08, the innovative crack and seat and rubbilisation methods of carriageway reconstruction have been incorporated into the designs for a number of schemes on the A9, including at Carrbridge, Bankfoot and Slochd (see figure 26).

Scotland TranServ is working with Transport Scotland and Transport Research Laboratory (TRL) to develop a Scottish Industry Advice Note for sustainable treatments of composite and rigid concrete carriageways on the network.



Figure 26 – Crack and seat operations on A9 Carrbridge in NW

The OC also developed proposals for a more sustainable grass cutting regime for 2009/10.

Scotland TranServ completed a study to understand the impacts its work has on carbon emissions. The results of the study should assist the OC in reducing carbon emissions associated with its day to day activities.

Scotland TranServ trialled the use of brash and logs from clearance operations to make “habitat piles”. This should create habitats suitable for nesting birds, invertebrates and reptiles, helping to promote biodiversity.

### SW – Amey \*\*\*\*

To reduce impact on resources, Amey monitors consumption of water, electricity, gas and fuel throughout the Unit and figures are reported monthly to Amey Group Board.

A meeting with an industry expert in improving the environmental performance of company fleet confirmed that Amey’s policy of using small low emission engines has created a more sustainable fleet. The OC expanded the environmental impact assessment for all design schemes to include research into sustainability. This should facilitate trials of any new innovations which could reduce its carbon footprint and make best use of natural resources.

Amey is set to trial an alternative filter medium made from recycled tyres which can be used as the top layer for a conventional Sustainable Urban Drainage Systems (SUDS) filter drain system.

## Maintaining the asset



### Maintaining roads and structures

Planned maintenance is carried out to maintain the asset value of the network. This typically includes:

- reconstruction and resurfacing of carriageways
- application of surface dressing and anti-skid surfacing
- upgrading safety fencing
- replacing road markings and studs
- repairs to structures, including joint replacement

These operations are carried out by the OC for scheme values up to £250k. Larger schemes are procured using works contracts.

## 2.7 Planned maintenance

### 2.7.1 Operations

The OCs are responsible for operations, although sub-contractors may be used for specialist activities and major operations, such as resurfacing, bridge deck waterproofing, and safety fence and bridge parapet replacement. Workmanship, supervision and performance are monitored by the OCs

#### NE – BEAR \*\*\*\*

Workmanship, especially machine laid patching and resurfacing, was generally carried out to a good standard. BEAR's site supervision and site records have shown steady improvement throughout the year.

#### SE – BEAR \*\*\*\*

Generally, the standard of workmanship was good, with a small number of issues subject to ongoing monitoring by PAG in 2009/10. Also, testing of surfacing materials and the quality of records improved over the course of the year.

A temporary bridging unit was successfully trialled on a scheme to refurbish an early reinforced concrete arch bridge on A68 in Jedburgh.

As part of the preparatory works for the opening of the A68 Dalkeith bypass BEAR successfully completed a scheme at Sheriffhall roundabout on A720, which included additional lanes, new signs, new street lighting and upgrading the traffic signals.

#### NW – Scotland TranServ \*\*\*

The general standard of workmanship was fair. The replacement of road markings and studs following surface dressing and patching works was an issue. This will continue to be monitored by PAG in 2009/10. Improvement is required by the OC in the quality of record keeping for operations.

Supervision by Scotland TranServ of its sub-contractors was good.

A resurfacing scheme is shown in [figure 27](#).



**Figure 27** – Resurfacing between West Tarbert and Kennacraig on A83 in NW

#### SW- Amey \*\*\*\*

The standard of workmanship and supervision by the OC and its sub-contractors continued to be good, with any issues identified quickly resolved.

One scheme successfully completed was the upgrade of A725 Whirlies roundabout ([see figure 28](#)).



**Figure 28** – Upgrading of Whirlies roundabout on A725 in SW

## Maintaining the asset



### Works contracts

Works contracts are procured for schemes with an estimated value greater than £250k and less than £5m, either from a standing list of contractors or by advertising in the Official Journal of the European Union. The OC manages this process, including carrying out the design, preparing drawings and construction supervision.

Schemes valued at more than £5m are put out to tender by Transport Scotland and are outwith the scope of the OC contracts.

- carriageway reconstruction
- carriageway resurfacing
- waterproofing of bridge decks
- refurbishment of several structures.

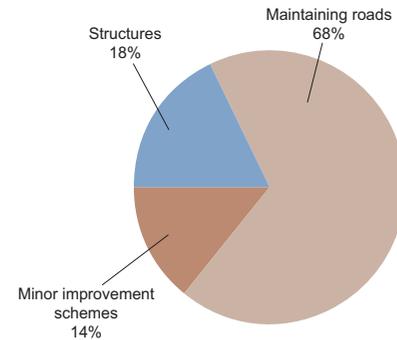


Figure 29 – Works contracts in 2008/09 by category

### 2.7.2 Works contracts

Figure 29 shows the types of work carried out under works contracts during 2008/09. The value of these contracts totalled £43.2m.

Works contracts are undertaken to help ensure that the trunk road asset continues to operate to the required standard. Typical schemes undertaken during the year included:

### Tender documents \*\*\*\*

OCs submit tender documents to PAG, of which at least 25% are reviewed prior to tender issue.

The OCs produced tender documents for 20 schemes, 12 less than the previous year. Of these six (30%), were reviewed by PAG. Further tender document information is given in figure 30.

Unit	Number received	Number reviewed	% Reviewed	Number reviewed and suitable to proceed
NE	8	3	38%	3
SE	7	2	29%	2
NW	3	0	0%	N/A
SW	2	1	50%	1
Total	20	6	30%	6

Figure 30 – Draft tender documents received by PAG in 2008/09

As with previous years, the standard of preparation of draft tender documents for all OCs was good.

Seven works contracts were successfully completed during the year and included reconstruction of the carriageway and footways on A96 within Keith.

### Workmanship and supervision

#### NE – BEAR \*\*\*\*

The OC provided good full-time supervision for works contracts. The general standard of workmanship was good (see figure 31). However, there was still room for improvement by contractors to reduce the amount of remedial works.



Figure 31 – A985 Bordie, good quality finish to works contract in NE

#### SE – BEAR \*\*\*\*

Workmanship was generally to a good standard throughout the year, but on occasions verge reinstatements could be improved. Supervision was good, with full-time site supervision staff being present.

BEAR successfully supervised completion of six works contracts including a number of major carriageway reconstructions on M8 and M9. One scheme on M8 incorporated a trial of different surfacing materials which is being monitored by TRL.

## Maintaining the asset



### Delivery highlight

#### Bothwell Street off-ramp refurbishment on M8 in SW

A £4.9m refurbishment of Bothwell Street Off-ramp took place in summer 2008. The scheme included the replacement of 15 bridge joints, concrete repairs, waterproofing, resurfacing the bridge deck, installation of new lighting columns and barrier replacements.

Transport Scotland, Amey and Glasgow City Council worked closely to minimise any possible congestion. During the planning process seven different diversion routes were considered and these were then analysed using specialist technology to determine the most effective route.



#### NW –Scotland TransServ \*\*\*\*

The standard of workmanship on works contracts was good, although there were some issues with the amount of remedial works required. Generally, works contracts were well supervised.

Four schemes were successfully completed during the year, including the replacement of A82 Achnambeithach Bridge, the reconstruction of A87 near Portree on Skye and resurfacing of A83 in Inveraray (see figure 32).



Figure 32 – A83 reconstruction works in Inveraray in NW

#### SW – Amey \*\*\*\*

The standard of workmanship and site supervision on works contracts was good. In 2008/09, nine works contracts were completed, including the replacement of

the final section of concrete carriageway on M74 and further refurbishment schemes on A898 Erskine Bridge.

#### Spotlight – Trends in Tenders \*\*\*\*

PAG carried out a review of procurement of works contracts to try and identify any trends in tenders, examine tender values and the control of final scheme costs. The study included only the 22 works contracts awarded during 2008/09. Of these, 18 schemes were completed during the year, three were still under construction after 31 March 2009 and one scheme started on site in April 2009. The total tender value of these works contracts was £35m.

The principal type of works falls into three categories:

- Pavement structural repairs
- Structures
- Minor improvements

The numbers of works contracts in each of these categories are indicated in figure 33.

Type of contract	No.
Pavement structural repairs	15
Structures	4
Minor improvements	3

Figure 33 – Types and number of contracts

The average number of tenderers per works contract in each Unit in 2008/09 ranged from 4.4 to 4.8 which is a slight increase from the previous year.

#### Trends in tenders

The trend in the average percentage difference between the lowest and highest tenderer was reducing year-on-year from 2001/02 (see figure 34). Last year, the figure was 27%, whereas for 2008/09 it was 33%. This suggests that tendering has become more competitive since 2001/02 and has now stabilised.

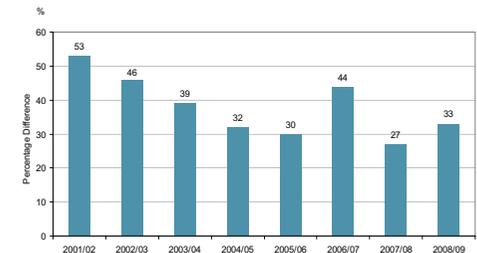


Figure 34 – The average percentage difference between lowest and highest tenderer

## Maintaining the asset



OC	NE	SE	NW	SW
Most successful contractor by number schemes won	Ennstone Thistle 57%	Tarmac 40%	N/A (see Note 1)	Tarmac 40%
Most successful contractor by value of schemes won	Ennstone Thistle 50%	Tarmac 47%	Highland Quality Construction 25.8% (See Note 1)	Tarmac 59%

Note 1: In NW, each of the works contracts was won by a different contractor

Figure 35 – The most successful contractors by number and value of schemes won

Trends in tenders showed:

- The pre-tender estimates were very close to the tender award values in NE, SE and NW. In SW, three structures schemes led to a significant increase of 12.6% due to the specialist nature of the works;
- NE had the most competitive tendering for the fifth consecutive year, with the average difference between the lowest and the highest tenderer being 23%;
- The highest average tender award value was £2,087k in NW, and the lowest average tender award value was £1,301k in NE;

- The highest tender award value was £4,093k in SW, and the lowest tender award value was £384k in NW.

Details of the most successful contractors by number and value of schemes won are shown in [figure 35](#).

### Tender value and outturn costs

As part of this study, the tender value and outturn costs of 19 works contracts were reviewed.

The average differences between tender award and estimated scheme outturn

values ranged from -8.3% in NW to +20.3% in SW.

In SW, the most significant variances were on the following works contracts:

- M73 Woodneuk Avenue and Johnston Road Bridge Painting (+32.9%). This increase in cost was primarily due to weather related extensions of time and increases in the scope of the works.
- M8/M74/M73 Concrete Repairs (+38.1%). Costs rose on this contract due to weather related works and a formal increase in the scope of the works.

Similar to last year, the biggest variances were again on structures works contracts, although no common factor for this was identified.

If these two structures schemes are excluded from the analysis, the average difference in SW was +5.0%.

In NW, the most significant variance (-14.3%) was on the A87 Varragill to Portree Phase 3 scheme, which was as a result of the scope of the scheme being reduced.

## Maintaining the asset



### Precautionary and reactive treatment

During the winter period, which runs from 1 October through to 15 May, the OCs must allow the safe movement of road users and minimise delays and disruptions caused by snow and ice. To do this, the OCs carry out precautionary and reactive treatments.

Precautionary treatment is when de-icing material is spread on road surfaces when low temperatures are forecast. Reactive treatment happens when ice has already formed on roads or footpaths and is often done in conjunction with snow ploughing.

The OCs decide which treatments are necessary to comply with the contract. They are also required to collect information on, and keep records of, the work they do to maintain the network in winter.

## 2.8 Winter

### Winter service

Transport Scotland aims to provide a 24-hours a day, 7 days a week dedicated and efficient service throughout the winter period, which runs from 1 October to 15 May. Its main objective is to keep the network free from ice and snow, as far as is reasonably practicable, hence reducing the risk to road users.

Figure 36 shows winter weather conditions on the network.

Current information from the Met Office indicates that in Scotland, the winter period from December 2008 to February 2009 was most severe since 2000/01.

The prolonged frost and snow experienced during January and February 2009 throughout the UK led to high levels of treatment and serious reductions in salt stock levels due to continuous demand.

Supplies were carefully monitored by Transport Scotland to ensure that each OC had sufficient stocks to meet its requirements. In addition, the OCs worked together to ensure the network was not affected. Transport Scotland

is considering the best means to make certain salt stocks are protected against a similar situation arising in future years.



Figure 36 – Winter conditions on the A889 in NW

### Road closures

The colder than average winter produced prolonged periods of frost and snow. Nevertheless, there were fewer winter related road closures than in most previous years (see figure 37).

Winter Period	No of winter related major incident road closures
2008/09	3
2007/08	6
2006/07	3
2005/06	7
2004/05	4
2003/04	11
2002/03	4

Figure 37 – Number of winter related major incident road closures over the last seven years

### De-icing material

De-icing treatments on the trunk road network are mainly of a precautionary nature and make use of pre-wetted de-icing material.

This system involves mixing the salt with brine before it is spread on the road surface. This means the salt adheres to road surfaces, resulting in a more efficient and effective use of the material (see figure 38).

In addition, there is less scattering of material onto areas with vegetation and, as a result, it is more environmentally friendly.

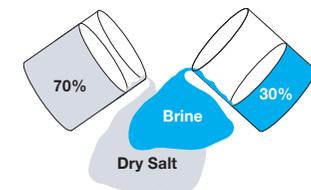


Figure 38 – Make up of pre-wetted salt

## Maintaining the asset



### Winter service audits

PAG carried out audits of the OCs':

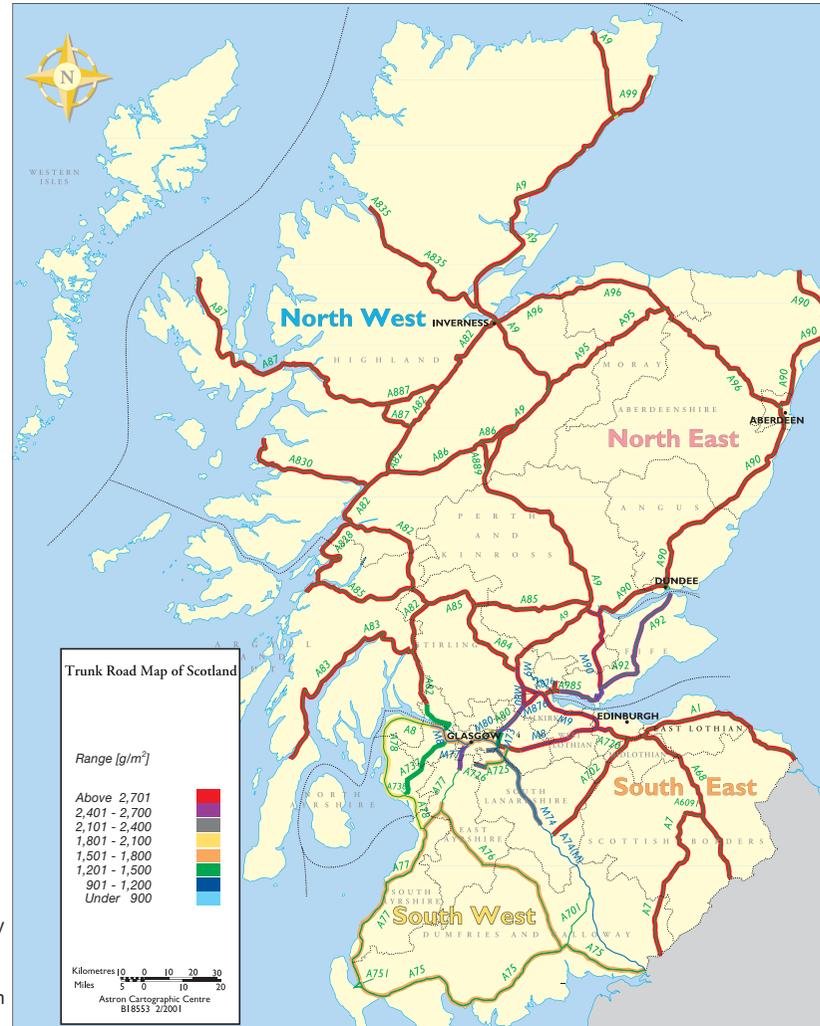
- winter readiness,
- response to any specific incidents.

The audits confirmed each OC's, winter service preparedness for 2008/09 was in accordance with the requirements of the Contract.

A remedial notice was issued to Amey in respect of its winter service provision on one night in January 2009. PAG subsequently audited Amey's winter decision making in February and March 2009. This was found to be generally robust with monitoring of conditions and subsequent treatments being instructed as required. The remedial notice is currently still open.



## Spotlight - Winter service



**Figure 39**  
Cumulative average precautionary de-icing material spread rate in 2008/09

Winter service operations are paid for on a fixed monthly lump sum basis and account for approximately 6% of the overall spend on the network. PAG investigated the following over the 2008/09 winter period:

- Precautionary de-icing material application rate per route.
- Precautionary de-icing material usage.
- Winter Service KPIs.

### Precautionary de-icing material application rate per route

The OCs' winter records were examined by PAG to identify the quantity of precautionary de-icing material spread on the network. Treatments varied within the contract requirements of 10 g/m<sup>2</sup> to 40 g/m<sup>2</sup> depending on the weather conditions anticipated and encountered.

As in previous years, a 20 g/m<sup>2</sup> spread rate was the most common application rate used.

Ethylene glycol is used as the de-icing material on certain major structures instead of pre-wetted salt. As such, the use of this material is not included

## Maintaining the asset



### Delivery highlight

#### Winter service improvements in NW

In NW, Scotland TranServ introduced a number of improvements to its winter service in 2008/09 including:

- erection of purpose built salt barns at Dunbeath and Perth depots
- introduction of 2 number 8x4 spreaders on A9 routes out of Kingussie, allowing larger payloads to be carried, thereby increasing effectiveness of winter services on these key high level routes.

Scotland TranServ has also proposed the replacement of ethylene glycol with potassium acetate (Isomex), which is a more environmentally friendly product and has better skid resistance properties. An environmental study is currently underway with a view to introducing this in the future.

in this spotlight. An alternative, more environmentally friendly material than ethylene glycol, is currently being trialled by Scotland TranServ in NW.

The extent of treatment across the network varies with the altitude, landscape, and climate throughout Scotland. From PAG's detailed analysis of the OCs' records, the cumulative average precautionary de-icing treatment spread rates were calculated for individual routes. The results of this analysis are shown in figures 39 and 40.

Unit	2008/09 (g/m <sup>2</sup> )
NE	3,132
SE	3,203
NW	4,245
SW	1,808

Figure 40 – Cumulative average precautionary de-icing material spread rates

The study showed that;

- The highest average spread rates were in NW, with all routes being treated with more than 2,700 g/m<sup>2</sup>. A86, A9 and A835 were treated with over 5,000 g/m<sup>2</sup>.
- In SE, all routes except A80 were treated with more than 2,700 g/m<sup>2</sup>. A702 and A7 were treated with more than 4,000 g/m<sup>2</sup>.

- All routes in NE were treated with more than 2,400 g/m<sup>2</sup>. On A95 and A96 BEAR spread more than 3,600 g/m<sup>2</sup>.
- As in previous years, the average treatment rate in SW was less than the other three Units, which may reflect a milder, wetter climate. A726, M74 and M77 were treated with more than 2,100 g/m<sup>2</sup>.

The amount of precautionary de-icing material used by each OC was greater than the previous year, reflecting the colder winter. The study showed NW used considerably more precautionary de-icing material than the other Units, in line with historic trends (see figure 41).

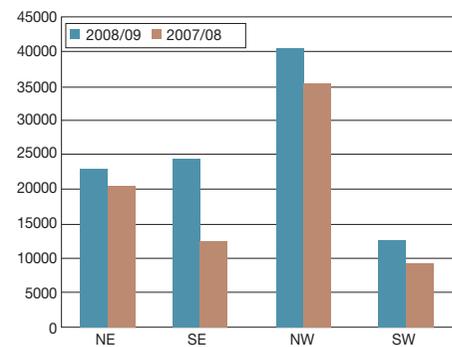


Figure 41 – Precautionary de-icing material tonnages

#### Winter service KPIs

To measure how well the OCs carry out their winter duties they report their performance monthly during the winter period using three KPIs. These cover:

- response times,
- treatment times
- successful electronic data logger downloads.

#### KPI for winter service response times

This measures how quickly de-icing treatment commences following a call-out. Treatment must start within one hour of a decision to treat. However, it should be noted that there are relatively few reactive call-outs over the winter period.

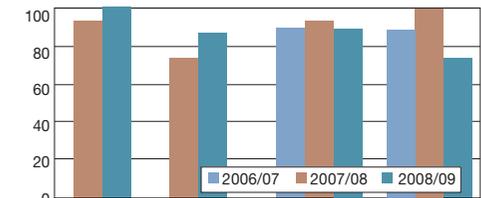


Figure 42 – Comparison of KPI for winter response times

## Maintaining the asset



Figure 42 shows:

**NE – BEAR \*\*\*\*\***

Excellent and improved performance.

**SE – BEAR \*\*\*\*\***

Good and improved performance.

**NW – Scotland TranServ \*\*\*\*\***

Good and sustained performance.

**SW - Amey \*\***

Poor performance, having dropped significantly from last year. SW has raised this issue within its quality system and substantial improvement is required during 2009/10. PAG will continue to monitor OC performance.

**KPI for winter service treatment times**

This measures OC performance in completing precautionary treatments across all routes within the contractual time of two hours.

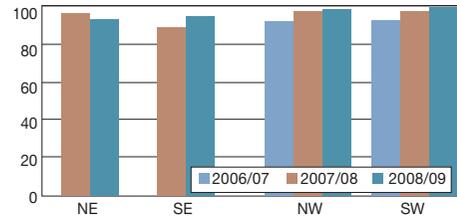


Figure 43 – Comparison of KPI for treatment times

Figure 43 shows:

**NE – BEAR \*\*\*\*\***

Good, but slight reduction in performance, which will be monitored.

**SE – BEAR \*\*\*\*\***

Good and substantially improved performance.

**NW – Scotland TranServ \*\*\*\*\***

Excellent and improved performance.

**SW – Amey \*\*\*\*\***

Excellent and improved performance.

**KPI for successful electronic data logger downloads**

The data loggers record, in electronic format, the de-icing material spread rate, location, date and time. The KPI measures the percentage of successful electronic data logger downloads.

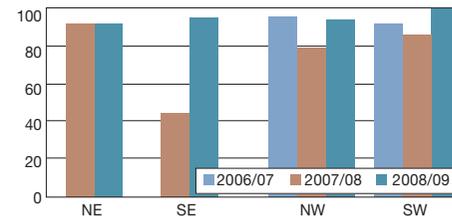


Figure 44 – Comparison of KPI for successful data logger downloads

Figure 44 shows:

**NE – BEAR \*\*\*\*\***

Good and sustained performance.

**SE – BEAR \*\*\*\*\***

Good and substantially improved performance, successfully addressing issues identified in 2007/08.

**NW – Scotland TranServ \*\*\*\*\***

Good and substantially improved performance.

**SW – Amey \*\*\*\*\***

Excellent and substantially improved performance.

**Summary of findings**

Overall, the above data indicates that the OCs' performance in delivering the winter service was generally good. Appropriate treatments were delivered and where required improvements continued to be made.

Winter response time performances in NE, NW and SE were either excellent or good. Amey's performance is being addressed via its quality system.

NW, SW and SE had either excellent or good performance for treatment times. NE was also good, but was poorer than 2007/08. This is being addressed by the OC.

All Units showed either excellent or good data logger download performance.

# Maintaining the Asset



## Emergencies

The OCs must provide resources to deal immediately with emergencies on the network or to assist the emergency services.

Emergencies include:

- debris removal,
- overturned lorries,
- road traffic accidents,
- landslips,
- flooding,
- serious carriageway defects,
- bridge/gantry strikes,
- spillages and
- incidents due to adverse weather.

The OCs are required to respond to emergencies as quickly as possible and within specific maximum timescales depending on the type of road and time of day.

## 2.9 Emergencies

### Emergency response

In 2008/09, the OCs responded effectively to incidents on the network, including working with other relevant authorities to minimise disruption to road users.

A KPI is used to monitor the OCs' maximum response times. See figure 45 for a comparison of performance for emergency response.

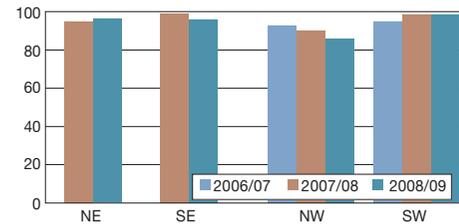


Figure 45 – Emergency response KPIs

#### NE – BEAR \*\*\*\*\*

The OC's performance in responding to emergencies was excellent, improving marginally on last year.

In August 2008, heavy rain resulted in the A92 in Fife being closed in a number of locations. BEAR mobilised appropriate

resources to deal with the incident resulting in the road being reopened as soon as possible (see figure 46).



Figure 46 – BEAR responding to flooding on A92 in NE

#### SE – BEAR \*\*\*\*\*

BEAR continued to provide an excellent level of performance in responding to emergencies.

Following heavy rainfall in early July 2008, the A7 was affected by landslips and embankment collapses at three locations. The OC responded well, rapidly mobilising resources, setting up diversion routes and working 24-hour shifts to reopen the route as quickly as possible.

#### NW – Scotland TranServ \*\*\*

The OC's overall performance was fair, with a slight downward trend in

performance from the start of the 3G contract, and there is room for improvement.

Although there were no major incidents, the OC dealt well with numerous smaller emergencies, the majority of which were spillages, road traffic accidents and debris.

Work is ongoing to improve slope stability at Rest and Be Thankful at A83, where temporary traffic lights are still in place following the landslide in October 2007.

#### SW – Amey \*\*\*\*\*

Amey continued to deliver excellent performance throughout the year in responding to emergencies.

In late September 2008, the Glasgow-bound M8 and M80 carriageways between Kingston Bridge and Crowwood roundabout were closed as result of a major diesel spillage. The OC deployed eight gritters and sweepers working in echelon to treat the carriageway. Close liaison with emergency services resulted in these busy routes being reopened with the minimum of delay.

## Maintaining the asset



### Hazard notices

When PAG's field engineers observe or identify hazardous situations within the Units, whether the responsibility of the OCs or third parties, hazard notices are issued to the OCs by mobile e-mail.

Hazards found on the network can include:

- Poor traffic management
- Faulty traffic signals
- Exposed electrical wiring
- Dangerous carriageway defects (potholes)
- Missing/broken ironwork and gullies (within trunk road boundary)
- Flooding

During the year 53 hazard notices were issued to the OCs. This is a 51% reduction on the number issued in 2007/08, and is 59% below the average number of hazard notices issued since the start of the 2G contracts in April 2001 (see figure 47).

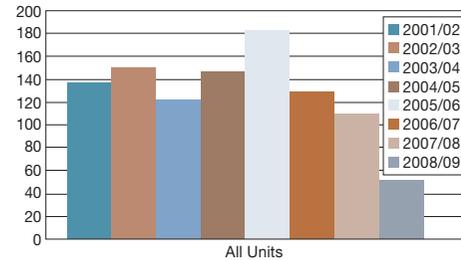


Figure 47 – Number of hazard notices issued

### Trunk road incident support service

A trunk road incident support service (TRISS) has been operational in SW since 2005 and SE since 2007. TRISS operates on routes identified as having the potential for delays due to breakdowns or other incidents. These vehicles are operated by the OCs (see figure 48).

The overall tasks and aims of TRISS are to:

- Provide an improved service to road users in clearing up incidents more quickly
- Reduce congestion
- Free up police time.

TRISS vehicles are specially adapted and equipped, high roofed liveried vans

operated by fully trained staff working for the OCs. When TRISS is not attending incidents other roadside tasks can be undertaken, such as sign cleaning and debris and litter collection

The target time for TRISS to get to an incident is 20 minutes if called out by the Traffic Scotland Operator, the OC control room or the police. Both OCs' TRISS teams performed very well throughout the year, with feedback from all parties, particularly road users, being positive.

The continued success of TRISS in SE and SW, both to the travelling public and the emergency services, resulted in Transport Scotland introducing a TRISS vehicle in NE at the start of April 2009.

In addition, Transport Scotland hosted a workshop with representatives from the OCs and the police to discuss how TRISS could be developed further.



Figure 48 - Typical TRISS vehicle used in the SE



A9 near Dunblane in NE

## Chapter 3

# Ensuring delivery

### Key points

#### Quality management

- The OCs continued to operate their quality management systems successfully, demonstrating continual improvement.

#### Environmental management

- All the OCs operated a successful environmental management system, although further improvement is required to raise environmental issues outwith the audit process.

#### Health and safety management

- The OCs continued to show a highly responsible attitude towards health and safety.
- The health and safety management systems run by all the OCs met the requirements of the contract.
- The OCs all introduced new health and safety initiatives across a number of areas.

#### Routine maintenance and management system

- All OCs are now fully utilising RMMS following resolution of the issues identified in 2007/08.

#### Contract control and management systems

- All the OCs continued to operate a robust, fully functional CCMS during the year.

#### Continuous improvement

- PAG and the OCs continue to work together to resolve issues.
- In NE, BEAR's performance was excellent and it responded well to issues as they arose, with no Remedial Notices being issued.
- BEAR in SE was slower in closing out issues. One Remedial Notice was issued and closed out in early 2008/09.
- Scotland TranServ's performance was excellent, responding quickly to issues as they arose. This was an improvement on last year and no Remedial Notices were issued.
- Amey in SW delivered fair performance. One Remedial Notice was issued, fewer than the previous year. Although action was taken by the OC, the Remedial Notice remains open.

## Ensuring delivery



### Quality management

#### OC management systems

The OCs are required to maintain management systems that comply with:  
 BS EN ISO 9001 – Quality management systems.

BS EN ISO 14001 – Environmental management Systems.

BS OHSAS 18001 – Occupational health and safety systems.

Management systems refer to a framework of processes and procedures used to ensure that an organisation can fulfill all tasks required to achieve its objectives.

Each OC is required to implement, maintain and continually improve the effectiveness and efficiency of its management systems to meet the requirements of the Standards, the contract and the needs of road user.

### 3.1 Management systems

#### Quality management

##### NE - BEAR \*\*\*\*

BEAR's quality management system (QMS) is well established, covering both NE and SE; and meets the contract requirements.

The internal audit programme was successfully completed on time, with 31 internal audits carried out. KPI 13 measures the closing out of internal corrections on time. BEAR's performance was good in the first half of the year but then reduced in the second half (see figure 49).

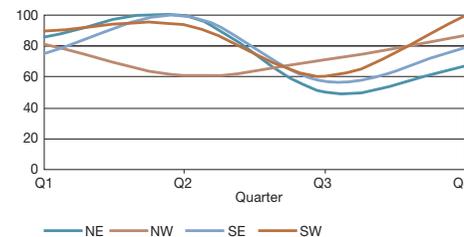


Figure 49 – Internal corrections closed out within stated timescale

CQMSM Audit Scope	No. Findings	No. Observations
Cyclic Maintenance	1	2
Supplier/Sub-contractor Evaluation, Measurement, Analysis and Improvement and Management Review	2	1
ISO 14001	2	5
Central Control Room - Winter Maintenance, Emergency Response	0	1

Figure 50 – CQMSM audits carried out in NE and SE

Four Contract Quality Management System Manager (CQMSM) audits were carried out by QMI Scotland Ltd, covering activities in both NE and SE. The audits identified continued compliance with the requirements in most cases and any issues were resolved or progressed accordingly (see figure 50).

PAG's audit of the QMS confirmed the system continued to work effectively.

BEAR demonstrated continual improvement of its processes including establishing a register of quality issues to monitor trends and identify potential non-conformances.

Closing out PAG corrections on time, measured by KPI 14, showed improvement by the end of the year. The OC did not close out any corrections on time during the first two quarters. The OC responded to requests from PAG to improve performance as shown in the third and fourth quarters (see figure 51).

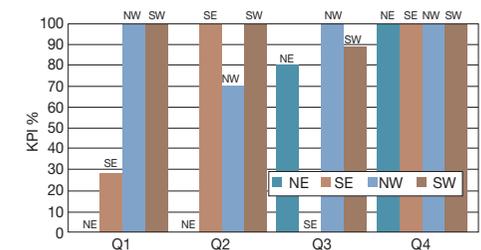


Figure 51 – OC performance in closing out PAG corrections

## Ensuring delivery



### Quality highlight

#### Quality initiatives

To celebrate World Quality Day on 14 November 2008, PAG hosted a Quality Summit attended by representatives from Transport Scotland and the OCs. The focal point of the day was ‘What does quality mean to the members of your organisation?’ Excellent presentations by all participants provoked lively discussions. All parties agreed the significant contribution quality has made to improve the management and maintenance of the Scottish trunk road network. The summit gave everyone some food for thought, particularly with regard to how to drive forward continued improvement.

#### ISO 9001:2008

ISO 9001, the quality management system standard, was revised and published towards the end of 2008. PAG’s QMS audits verified the OCs are ready to implement this revised standard.

#### SE – BEAR \*\*\*\*

BEAR operated the same QMS as in NE.

The OC successfully completed 31 audits in the year. However, performance in closing out internal audit corrections on time varied (see figure 49).

QMS audits by PAG confirmed the system continued to be well managed and was working effectively and efficiently.

Figure 51 shows performance by BEAR in closing out corrections raised by PAG was varied. The OC did not close out any corrections on time in the third quarter but responded to requests by PAG in the final quarter to improve performance.

#### NW – Scotland TranServ \*\*\*\*

Scotland TranServ has a well established QMS and continued to make improvements to its processes.

22 internal audits were successfully completed in the year. Scotland TranServ’s performance in closing out internal audit corrections on time was variable, improving towards the end of the year (see figure 49).

CQMSM Audit Scope	No. Findings	No. Observations
QMS (Quality)	0	6
QMS (Safety)	3	4
QMS (Environmental)	2	19
QMS (Quality)	1	6

Figure 52 – CQMSM audits carried out in the NW

As required, four CQMSM audits were carried out and actions identified were completed accordingly (see figure 52).

PAG carried out a joint audit with Balfour Beatty Infrastructure Services (BBIS) on Scotland TranServ’s QMS. The audit found continued compliance with ISO 9001 requirements and the contract, with evidence of continual improvement and development.

The closure of PAG corrections within stated timescales, as measured by KPI 14, showed good performance for most of the year (see figure 51).

#### SW – Amey \*\*\*\*

Amey’s QMS is well established and continues to be monitored and improved.

Amey successfully carried out its 28 scheduled internal audits during the year. This included verification audits, which were introduced in 2007/08, to confirm the actions taken to close out non-conformances were effective. KPI 13 for the close out of internal audit corrections indicated generally good performance, with the exception of the third quarter where performance dipped (see figure 49).

As in the other Units, four CQMSM audits were completed. Although not equally spaced out over the year, as required by the contract, these audits were effective with an additional follow-up audit on routine and cyclic maintenance. Continued compliance was evident in most areas with any issues raised progressed accordingly (see figure 53).

PAG audited Amey’s QMS and found the system to be effective with a sustained emphasis on continual improvement. Weaknesses identified at previous QMS audits were resolved.

## Ensuring delivery



CQMSM Audit Scope	No. Findings	No. Observations
Environmental Management System - Legal Obligations	6	0
Routine and Cyclic Maintenance Programme including Inspections	0	0
Operating Instruction process at depots and central records	0	0
Internal Audit Schedule and Closure of Findings, management review, improvement of IMS	3	0
Compliance with the specification – inspection and testing of the works	2	0

Figure 53 – CQMSM audits carried out in SW

Performance in closing out corrections raised by PAG (KPI 14) varied throughout the year with improvement evident in the final quarter (see figure 51).

### Environmental management

In addition to auditing each of the OCs' environmental management systems (EMS), PAG carried out a number of environmental monitoring visits to OC operations and depots throughout the year. These confirmed each of the OCs has continued to develop its EMS and improvements were clearly visible.

In particular, depots across the network were improved to ensure compliance with environmental legislation and standards.

Some operational environmental issues continued to arise on sites of OC operations, where OC management systems personnel may have less influence or control. Non-conformances were raised where applicable and action taken by the OCs to improve performance.

### NE – BEAR \*\*\*\*

BEAR's two strategic environmental objectives, originally set for 2007 and carried forward into 2008 for both NE and SE, were to:

- achieve certification to ISO 14001
- increase the effectiveness of waste control.

BEAR continued to develop its EMS during 2008/09, successfully achieving the first stage assessment for certification. The OC is working towards the second stage assessment, following which it should achieve certification to ISO 14001.

During the year, BEAR made a concerted effort to manage the waste it produces by splitting all waste into appropriate waste streams. This was collected by a waste management sub-contractor for disposal or recycling, and included a "green" waste stream collected for composting. The waste management sub-contractor provides the OC with reports on waste quantities. However, BEAR had not fully considered how it would measure the effectiveness of its waste controls.

Improvements in environmental performance both at OC depots and

operations sites were evident during monitoring visits by PAG, with any issues identified successfully addressed. Although environmental awareness training was updated, very few non-conformances or preventive actions relating to environmental issues were raised outwith the audit process.

### SE – BEAR \*\*\*

BEAR has developed a single EMS, which is being used in both SE and NE.

As in NE, waste is separated in to streams at the depots and collected by one sub-contractor, who provides regular reports on the quantities disposed of or recycled.

Improvements were made to the drainage systems at both Bilston Glen and Newton St Boswells depots, with increased hardstanding areas and the installation of new oil interceptors, addressing issued raised in 2007/08.

OC operations sites visited by PAG during the year were well maintained. Several instances of damage to carriageway verges were evident indicating insufficient supervision during operations.

## Ensuring delivery



As in NE, environmental awareness training was updated, However, further improvements are required to ensure environmental issues are identified at an early stage.

### NW – Scotland TranServ \*\*\*

Scotland TranServ continues to be included in the scope of its parent company's ISO 14001 certification.

The OC has produced a number of environmental objectives. However, some were either not time constrained or not measurable, making it difficult to assess progress.

Scotland TranServ introduced a new waste monitoring system at all depots and offices, which will highlight areas where waste can be reduced, re-used or recycled. This should produce a significant improvement to the OC's management of waste.

The OC is seeking to upgrade its depots by improving drainage and providing hard standings to prevent contamination of surrounding areas from accidental spills.

Environmental management of works contracts was good, in particular the new bridge at A82 Achnambeithach. However, on some OC operations, potential environmental contamination of adjacent areas was evident, indicating a lack of supervision.

A number of environmental initiatives were introduced into schemes including reducing waste by the re-working of existing pavement material and the use of new high performance materials. Also, for a number of schemes the OC put measures in place to reduce the impact on local wildlife.

Although a considerable number of environmental non-conformance reports (NCR) were raised following PAG and internal audits, the OC raised very few environmental non-conformances outwith the audit process. Where non-conformances were raised these are all being actioned accordingly.

### SW – Amey \*\*\*

Amey successfully retained its ISO 14001 certification.

The OC's environmental objectives were set at a corporate level to be cascaded

down to local levels. Whilst the objectives were measurable, not all had targets set, as required.

PAG visited a number of depots throughout the year and found Amey's environmental performance to be variable. Issues were identified at a depot Amey shares with a local authority. However, the OC's ability to influence the depot operator appeared to be limited.

Measures to minimise environmental impact were evident at a number of OC operations sites visited by PAG. These included mobile silt traps and reuse and recycling of material during the removal of the M74 concrete carriageway.

Amey took appropriate action to address the significant number of environmental NCRs raised following PAG or CQMMS audits. However, no environmental non-conformances were raised outwith the audit process.

### Health and safety management

Health and safety is a high priority for all parties. The 3G contract reflects this by requiring each OC to operate a health and

safety (H&S) management system meeting the requirements of OHSAS 18001.

During 2008 the Health and Safety Executive (HSE) published guidelines on hand-arm vibration (HAV) relating to the Control of Vibration at Work Regulations 2005.

As part of its audits, PAG reviewed HAV initiatives implemented by the OCs. It was evident that the OCs had invested and spent considerable time in developing safe practices to protect and monitor workers' exposure times through a variety of methods, such as vibration monitoring equipment used in SW (see figure 54).



Figure 54 – HAV meter for monitoring hand vibration used in SW

## Ensuring delivery



### NE and SE - BEAR \*\*\*\*\*

BEAR delivered excellent performance in NE and SE.

As the first step towards OHSAS 18001 certification, BEAR is preparing for Stage 1 assessment by Lloyd's Register Quality Assurance in August 2009.

During the year BEAR implemented management system activity audits and site specific risk assessments to all areas of operations as part of a major initiative on accident prevention.

PAG's joint audit on both NE and SE verified compliance with OHSAS 18001, as well as continued improvement. This was demonstrated by the use of waterproof gang information packs and further development of risk assessments and systems to provide a safer environment for all employees and other parties.

### NW - Scotland TranServ \*\*\*\*\*

Scotland TranServ's performance was excellent.

PAG's H&S audit confirmed that Scotland TranServ's system, certified to OHSAS 18001, continued to meet the requirements of the contract.

Scotland TranServ introduced a behavioural safety campaign, 'Zero Harm', with the aim of significantly reducing the likelihood of accidents to employees and road users on the network (see figure 55).



Figure 55 – 'Zero Harm' campaign in NW

### SW – Amey \*\*\*\*\*

Amey delivered excellent performance and continues to be accredited to OHSAS 18001. PAG's audit showed continued compliance with the contract.

Amey introduced a number of H&S initiatives during the year, such as limiting exposure to HAV through the use of a measurement device being trialled on power tools.

Another initiative was the introduction of a 'Smart car' for use in convoy working rather than a quad bike (see figure 56), which allows for greater driver protection.



Figure 56 – Smart Car used for convoy working in SW

## Ensuring delivery



### RMMS

The RMMS is a computer-based system operated by the OC. The contract states the OC must operate and maintain an RMMS to record details of routine maintenance work on the network.

### CCMS

The CCMS is a computer-based cost management system, and its functionality is specified in the contract. The system, provided and operated by the OCs, is designed to enable them to manage their operations effectively. It also gives all parties working on the contract, including Transport Scotland and PAG, access to information about how projects are being managed and where the money is being spent.

## 3.2 Information systems

### Routine maintenance and management system

The RMMS was supplied by Transport Scotland through its software supplier WDM. Transport Scotland, WDM, the OCs and PAG worked together to resolve the issues identified in 2007/08. All OCs are now fully utilising the RMMS and have action plans in place to address the backlog of data and some other minor issues.

PAG developed a number of analysis and reporting tools within RMMS to assist the OCs in improving the reporting of performance and to ensure system functionality.

### Contract control and management system

The OCs continued to operate fully functional contract control and management systems (CCMS) during 2008/09. Whilst certain functional areas of CCMS performance, around reporting for example, gave some cause for concern this did not affect the integrity of the systems.

### NE and SE – BEAR \*\*\*\*

CCMS operated as required during 2008/09. There were some minor issues, which did not impact on the system integrity. These are being addressed through CCMS Systems User Group forums.

### NW – Scotland TranServ \*\*\*\*

The OC's CCMS performed well, with minor issues addressed through User Group forums. Scotland TranServ indicated it will be upgrading its CCMS in 2009/10, with appropriate testing to ensure the existing system controls are not affected.

### SW – Amey \*\*\*\*

Early in 2008/09, Amey addressed the CCMS issues identified in previous years and the system performed well during the remainder 2008/09.

### CCMS/RMMS link

In 2008/09, Transport Scotland, PAG and the OCs worked together to resolve the system linkage issues between the respective OCs' CCMS and the central RMMS. These links continue to work effectively.

## Ensuring delivery



### Resolving problems and improving performance

Management systems are required to continually improve the effectiveness and efficiency of an organisation by identifying areas for improvement to the organisation's processes. The OCs are, therefore, required to regularly monitor and verify their activities by testing, inspection and auditing, and to take action where necessary to prevent use and recurrence when deficiencies are uncovered.

### 3.3 Continuous improvement

PAG monitors the OCs' NCR registers, CCMS, RMMS and other shared documentation, together with reviewing PAG ORIs, hazard notices and audit findings.

Where an issue has been identified and an OC has not instigated correction through its management systems, PAG manages this to conclusion using a formalised escalation process (see figure 57).

PAG works with the OCs to try and resolve issues before they escalate to NNCs or Remedial Notices.

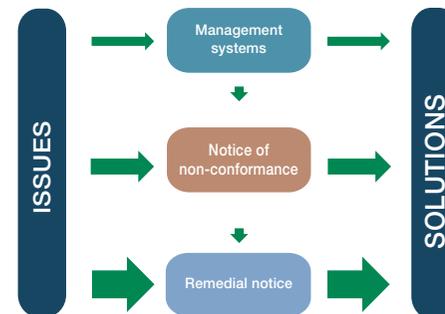


Figure 57 – Procedure for resolving problems

Where an issue is escalated by either NNC or Remedial Notice, the OC is required to manage the default in accordance with its QMS within the specified timescale.

The OCs, in most cases, respond positively to these notices and rectify the immediate problems and improve overall effectiveness. The progress of these notices are reported fortnightly and discussed at monthly progress meetings between Transport Scotland, PAG and each OC.

### OC performance

#### NE – BEAR \*\*\*\*\*

The OC's performance was excellent, improving significantly on last year. During 2008/09, two NNCs were issued, a significant improvement on the 13 in the previous year. BEAR responded promptly and both NNCs were subsequently closed (see figure 58). Five NNCs open at the end of 2007/08 were also closed.

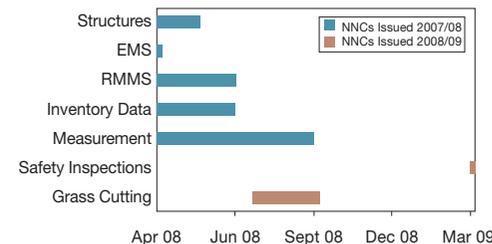


Figure 58 – Issue and Closure of NNCs in NE during 2008/09

In addition to this, in early 2009/10, a NNC was issued for measurement issues relating to electrical operations undertaken in the previous year. This NNC was subsequently closed.

No Remedial Notices were issued during 2008/09 compared with one last year. This demonstrated, together with the reduction in NNCs raised, continual improvement of the OC's management systems with issues being identified and resolved at an early stage.

#### SE – BEAR \*\*\*\*

In SE, BEAR's performance was good. Two NNCs were issued and subsequently closed, which compared favourably with 13 in the previous year (see figure 59). In addition, the seven NNCs open at the end of 2007/08 were also closed.

# Ensuring delivery

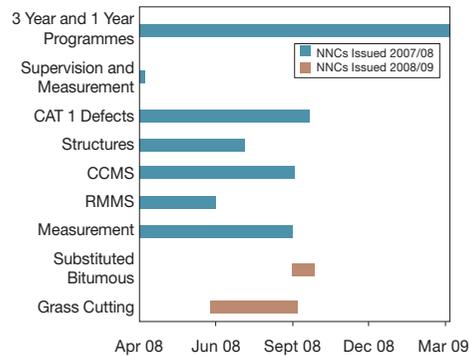


Figure 59 – Issue and Closure of NNCs in SE during 2008/09

One Remedial Notice was issued in early 2008/09 for:

- failure to complete the cyclic maintenance programme for structures in 2007/08.

This was an escalation of a NNC issued during 2007/08. The OC subsequently completed the maintenance programme and the Remedial Notice was closed in the summer of 2008.

## NW – Scotland TranServ \*\*\*\*\*

The OC’s performance was excellent. A total of four NNCs were issued, which was an improvement on the OC’s performance in the previous year. Scotland TranServ responded promptly and all NNCs were closed out timeously. The two NNCs open at the end of 2007/08 were also closed. As a result of this and the continual improvement shown by the OC no Remedial Notices were issued, which was a reduction from three in the previous year (see figure 60).

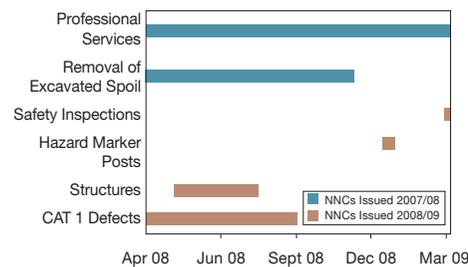


Figure 60 – Issue and Closure of NNCs in NW during 2008/09

In addition to this, in early 2009/10, a NNC was issued and subsequently closed for measurement issues relating to electrical operations undertaken in the previous year.

## SW – Amey \*\*\*

Amey’s performance was fair. Three NNCs were issued over the year, which was a reduction from five in 2007/08. Amey’s response to NNCs was good, with all NNCs closed out satisfactorily (see figure 61). In addition, the NNC open at the end of 2007/08 was also closed.

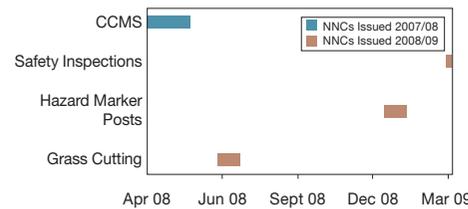


Figure 61 – Issue and Closure of NNCs in SW during 2008/09

A Remedial Notice was issued in early 2009 for:

- poor winter service provision on 20/21 January 2009.

Actions to resolve this issue were implemented by the OC, although the Remedial Notice remained open at the end of the year.

## Key performance indicators

### KPI 27 - Time taken to process planning applications - 100% target

In NE, performance was excellent, remaining at 100% for the whole of 2008/09. In both SE and NW, there was variable performance over the course of the year. Both OCs showed improved performance towards the end of the year and maintained performance levels of 100%. Amey also had variable performance throughout the year (see figure 62).

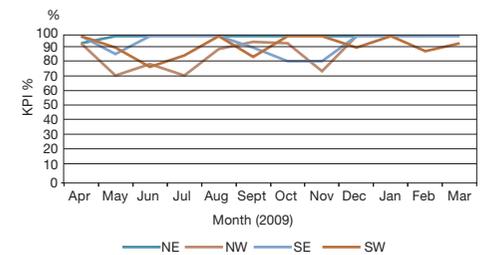


Figure 62 – KPI 27 - Time taken to process planning applications

## Ensuring delivery



### KPI 28 - Submission of reports, programmes and minutes - 100% target

In NE and SE, performance was excellent with consistent results of 100% throughout 2008/09. Scotland TranServ performed consistently, averaging 89% for the year. Although results dipped in the middle of the year, Amey's overall performance was very good, averaging 97% (see figure 63).

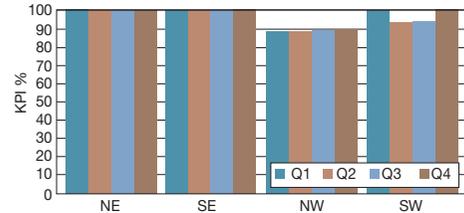


Figure 63 – KPI 28 - Submission of reports, programmes and minutes

A review by PAG identified each OC records performance for this KPI differently. Transport Scotland, PAG and the OCs are working together to ensure consistency in reporting this KPI.

### KPI 29 - Answering of correspondence, enquiries and complaints - 100% target

BEAR's performance in NE was excellent, recording 100% throughout the year. In SE, BEAR started well with 100% in the first quarter, however this performance was not maintained in subsequent quarters. Scotland TranServ never met the KPI target, although improvement was seen in the last quarter, with the OC recording 90% performance. Amey's performance varied throughout the year, with improvement shown in the second half of the year, recording 93% and 100% in the third and fourth quarters respectively (see figure 64).

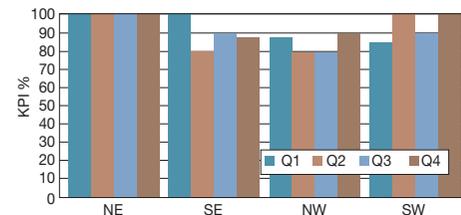


Figure 64 – KPI 29 - Answering correspondence, enquiries and complaints

### KPI 30 - Draft responses and briefings to Transport Scotland on general and Ministerial correspondence - 100% target

All OCs maintained very good or excellent performance throughout the year, with only slight dips in performance recorded in NE and SE (see figure 65).

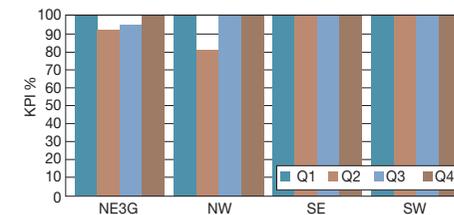


Figure 65 – KPI 30 - Draft responses and briefings to Transport Scotland on general and Ministerial correspondence

## Chapter 4

# Ensuring value

### Key points

#### Overall position

- The budget allocation from Transport Scotland of £132.2m was approximately 22% less than the higher than average funding in the last two years.
- Efficiency savings of £19m were made across the network, similar to 2007/08.

#### Budget, orders and spend

- The OCs systems for financial control were generally robust, with some issues addressed during the year.
- Overall spend was broadly in line with budget for all OCs, with overspends in NE, SE and SW being partly off-set against a slight underspend in NW.
- With the exception of SW, there is room for some improvement from all OCs in their measurement processes.
- The OCs need to improve their monitoring to prevent over ordering against budget.

#### Claims and commercial issues

- All parties are working together to implement the new process to speed up resolution of issues.



## 4.1 Financial spend

### Overall position – all Units

A financial comparison between 2008/09 and the previous year is shown in figure 66.

	2008/09	2007/08	%
	£m	£m	+/-
Budget Allocation	132.2	168.5	-21.5
Budget Spent (excl.CPF)	134.6	165.8	-18.8
Total Value of Work Done (incl CPF)	145.8	171.9	-15.2
Split:			
- Operations	102.6	116.1	-11.6
- Works Contracts	43.2	55.8	-22.6

Figure 66 –Financial comparison – All Units

A full profile of individual financial performance is given in figure 67.

2008/09 saw a significant reduction in budget from the higher than average funding in the last two years (see figure 7). In addition, Transport Scotland reduced the total budget available to the OCs by a further £4.8m during December 2008 and January 2009, to £132.2m.

As a result, the OCs had to re-programme operations and works resulting in a net

overspend of £2.3m (2%) across all Units. SW reported the largest overspend at £1.2m (3%) followed by SE at £0.95m (4%). NE exceeded its budget by £0.42m (1%), whilst NW underspent its budget by £0.27m (1%).

three and two years respectively. As such, CPF indices are now at significantly higher percentages compared to the start of the contracts. When calculating the CPF, the base for Tranche 1 is 2005 and for Tranche 2 is 2006.

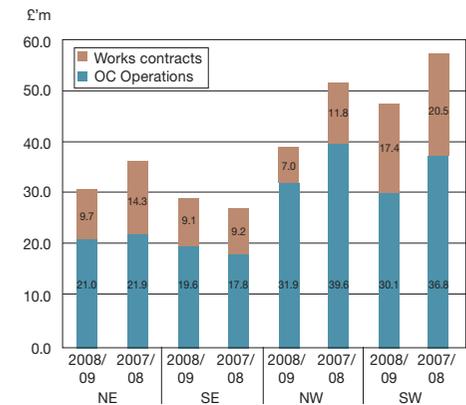


Figure 67 – Spend split by works and operations (including CPF) – all Units

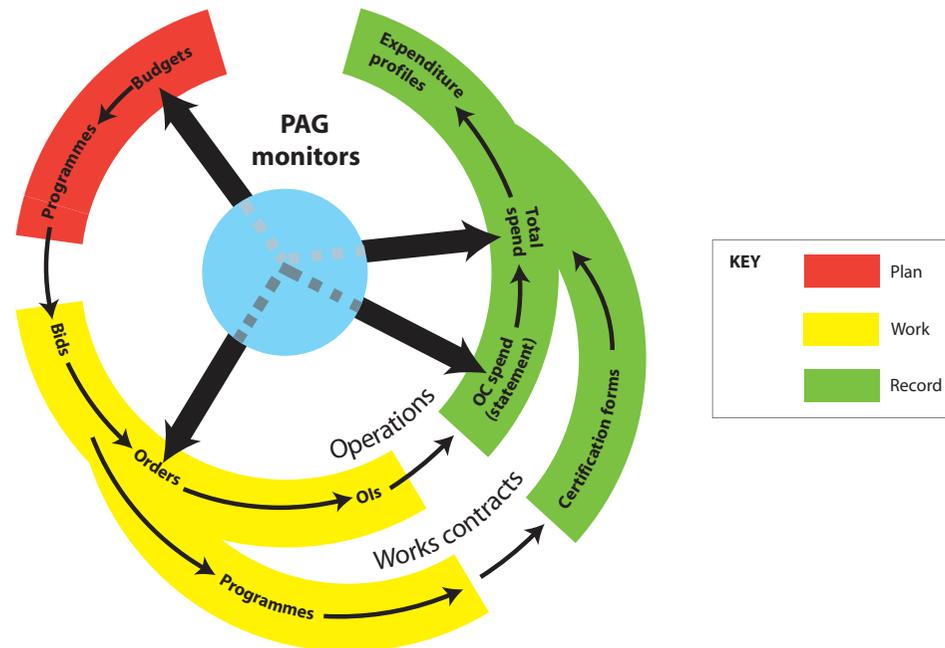
The 3G contracts have delivered £19.2m of efficiency savings when compared to the 2G contracts. Whilst this figure is similar to the £17.8m reported in 2007/08, the mix of work carried out had changed from the previous year.

Contract price fluctuations (CPF), applied to OC rates, increased from £6.1m in 2007/08 to £11.3m in 2008/09. This increase reflects that the 3G contracts for Tranche 1 and Tranche 2 have completed



## 4.2 Budget, orders and spend

PAG monitors and reports on the inter-relationship of budget, orders and spend. How this fits into the overall process is shown in figure 68 below:



A comparison of spend against budget for the years 2008/09 and 2007/08 is shown at figure 69.

Figure 68 – Financial monitoring process

	2008/09 £m	2007/08 £m
Spend	134.6	165.8
Budget	132.2	168.5
Over/(under) spend	2.4	(2.7)
Spend/budget %	101.8	98.4

Figure 69 – Spend v Budget (excluding CPF)

## Budget control

Budgetary control by the OCs is an important management function. Audits of the OCs' budgetary control were carried out during 2009 at the request of Transport Scotland. These showed the OCs have generally robust and comprehensive systems of budgetary control, and are committed to regular review of spend against budget. Some issues were identified and taken forward with the OCs.

### NE – BEAR \*\*\*\*

Spend was generally in line with the budget, showing a slight overspend of £0.42m (2%). BEAR was the only OC to receive a net increase in budget of £0.6m during December 2008 and January 2009.

## Ensuring value



BEAR's budget for minor improvements was reduced by £1.8m due to delays outside the OC's control, such as land issues and statutory processes.

### SE – BEAR \*\*\*

BEAR recorded a net overspend of £0.95m (4%). The only issue was with inaccurate expenditure profiles towards the end of the financial year.

### NW – Scotland TranServ \*\*\*\*

Scotland TranServ was effective in revising its maintenance programme following a reduction of £2.3m in the routine and structural maintenance budgets during December 2008 and January 2009.

The OC's budget for minor improvements was reduced from £8m to £4m due to delays outside the OC's control, such as land issues and statutory processes. This affected four schemes, two of which were delayed until late 2008/09 and continued into the following year. The other two schemes were re-programmed for future financial years.

### SW – Amey \*\*\*

Amey's budget was the highest at £42.1m, with spend exceeding this amount by £1.2m (3%).

The OC was aware in December 2008 that it could potentially overspend its structural maintenance budget, but was not able to effectively revise the programme to prevent an overspend of £1.0m.

Amey was also not effective in revising its programme to account for the £1.6m reduction in its routine maintenance budget over December 2008 and January 2009, overspending by £0.5m.

### Financial control in delivering Operations

Figure 70 shows the bidding for work process:

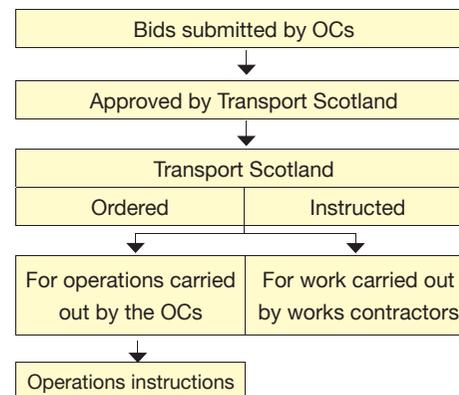


Figure 70 The bidding for work process

As with 2007/08, PAG auditing and monitoring during the current year identified some concerns over the robustness of the measurement process. All parties are working together to ensure the measurement process is robust.

Where appropriate, monies were deducted from the OCs for failure to substantiate measurements claimed.

### NE and SE – BEAR \*\*\*

NNCs were issued to both Units in March 2008 for measurement process failures. Following successful implementation of a revised measurement procedure, these were closed out in September 2008.

A NNC was issued to NE in April 2009 for measurement issues surrounding electrical operations undertaken in 2008/09. This was subsequently closed out in May 2009 following appropriate remedial action by the OC.

### NW – Scotland TranServ \*\*\*

The OC implemented an action plan to address measurement issues, which were the subject of a Remedial Notice issued in 2007. PAG undertook an audit and measurement reviews which confirmed

the OC was effectively implementing the action plan. This resulted in the closure of the Remedial Notice in September 2008.

As in NE, a NNC was issued in April 2009 for measurement issues relating to electrical operations undertaken in 2008/09. This was closed out in May 2009 following remedial action.

### SW – AMEY \*\*\*\*

Following successful implementation of an action plan in 2007/08, Amey continued to operate an effective measurement process in 2008/09. Some issues arose during the year and these were addressed.

### Orders v Spend

The OCs have a responsibility to ensure that the value of orders issued by Transport Scotland matches their annual budgets and subsequent spend.

It is inevitable operational demands will change and work bid and ordered may not proceed or alterations are made to the specification. All of these may have a significant impact on financial out-turn.

## Ensuring value



As a consequence, an important aspect of the OCs' financial management is to ensure that, in these circumstances, de-bids are submitted to enable the level of ordered work to track budget and anticipated spend.

Throughout the year, the OCs' financial management was monitored by PAG to ensure spend for each scheme did not exceed order value. PAG also reported on the relationship between budget, order value and spend for operations. This was also examined during PAG's process audits on budget control in March 2009.

These audits highlighted improvement is required by all OCs to prevent over ordering against budget.

During 2008/09 there was the risk of an overspend due to the reduction in budgets in December 2008 and January 2009.

Failure to resolve overspends on specific schemes resulted in monies being deducted during the year.

### NE – BEAR \*\*\*\*

BEAR's performance in managing order v spend was good and improved from the

previous year. The total value of orders issued was 10% above the operations budget, whilst spend was 2% more than budget. This compares with 2007/08 where spend was in line with budget but the total value of orders exceeded budget by 36%.

### SE – BEAR \*\*\*

Performance in SE also improved on last year. Operations spend matched budget, although the total value of orders exceeded budget by 11%. Whilst this was a significant improvement on 2007/08 (28%), this is an area the OC must address to minimise the risk of spend exceeding budget.

### NW – Scotland TranServ \*\*\*\*

Scotland TranServ's performance was good. Whilst the total value of orders exceeded operations budget by 5%, compared to 20% last year, operations spend was 4% less than budget. Spend was 2% less than budget in 2007/08.

### SW – Amey \*\*\*

Overall, Amey's performance showed a marginal improvement on last year. Operations overspent budget by 4% and the total value of orders exceeded

operations budget by 11%. The figures were 2% and 18% respectively in 2007/08. PAG will continue to monitor this during 2009/10.

## 4.3 Claims and commercial issues \*\*\*

The 3G Contract that Transport Scotland has in place with its OCs is wide-ranging and therefore has many different requirements. As such there will be issues around contract interpretation.

The commercial teams within Transport Scotland and PAG review all issues as they arise. In addition, regular commercial meetings are held between parties to resolve matters.

Progress in resolving commercial issues during 2008/09 was slower than anticipated. A new process to speed up the resolution of these issues was introduced and all parties are now working together to implement this.

## Performance at a glance

PAG has used a rating system to assist in benchmarking OC performance. These performance ratings have been applied throughout the Annual Report to reflect overall OC performance for the various areas reviewed. This performance at a glance table is a summary of these ratings. Only the star rating appears throughout the report and the background shading seen in the table is only to assist readers of the report.

Key:

*****	Excellent
****	Good
***	Fair
**	Poor
*	Unacceptable

	NE	SE	NW	SW
<b>Chapter 2 Maintaining the asset</b>				
<b>2.1 Roadworks and traffic management</b>				
2.1.1 Coordinating roadworks	*****	*****	*****	*****
2.1.2 Safety at roadworks	****	****	****	****
<b>2.2 Inspections</b>				
2.2.1 Safety inspections	****	*****	****	**
<i>Repair of category 1 defects</i>	****	*****	**	**
2.2.2 Detailed inspections				
Spotlight - Annual carriageway detailed inspections	****	****	****	****
<i>Network referencing</i>	****	****	**	****
<b>2.3 Maintenance</b>				
2.3.1 Cyclic and reactive maintenance				
<i>Safety fences, barriers and fences</i>	*****	*****	*****	*****
<i>Signing, signals, road markings and studs</i>	*****	**	**	***
<i>Lighting</i>	*****	****	*****	*****
<i>Sweeping, cleansing and litter</i>	****	***	N/A	****

	NE	SE	NW	SW
<i>Drainage, gullies and ironworks</i>	***	***	***	*****
Spotlight - Drainage	**	**	**	****
2.3.2 Landscaping				
<i>Grass cutting</i>	****	***	***	****
<i>Weed control</i>	***	***	**	***
<i>Controlling vegetation</i>	****	***	****	****
2.3.3 Structures				
<i>Structural maintenance</i>	****	****	****	****
Spotlight - Cyclic maintenance of structures	****	****	****	****
<b>2.4 Design</b>				
<i>Submission of Sols</i>	***	***	***	*****
Spotlight - Scheme justification audits	***	***	***	***
<b>2.5 Improving safety</b>				
<i>Strategic road safety schemes</i>	****	*****	****	*****
<i>Minor improvement schemes</i>	****	****	****	****

## Performance at a glance

Key:

*****	Excellent
****	Good
***	Fair
**	Poor
*	Unacceptable

	NE	SE	NW	SW
<b>2.6 Sustainability</b>	****	****	****	****
<b>2.7 Planned maintenance</b>				
2.7.1 Operations	****	****	***	****
2.7.2 Works contracts				
<i>Tender documents</i>	****	****	****	****
<i>Workmanship and supervision</i>	****	****	****	****
Spotlight - Trends in tenderers	****	****	****	****
<b>2.8 Winter</b>				
Spotlight - Winter service				
<i>Winter services response times</i>	*****	****	****	**
<i>Winter services treatment times</i>	****	****	*****	*****
<i>Electronic data logger downloads</i>	****	****	****	****
<b>2.9 Emergencies</b>	*****	*****	***	*****

	NE	SE	NW	SW
<b>Chapter 3 Ensuring delivery</b>				
<b>3.1 Managing systems</b>				
<i>Quality management</i>	****	****	****	****
<i>Environmental management</i>	****	***	***	***
<i>Health and safety</i>	*****	*****	*****	*****
<b>3.2 Information systems</b>				
<i>Contract control and management systems</i>	****	****	****	*****
<b>3.3 Continuous improvement</b>	*****	****	*****	***
<b>Chapter 4 Ensuring value</b>				
<b>4.1 Financial spend</b>				
<b>4.2 Budgets, orders and spend</b>				
<i>Budget control</i>	****	***	****	***
<i>Financial control in delivering operations</i>	***	***	***	****
<i>Orders v Spend</i>	****	***	****	***
<b>4.3 Claims and commercial issues</b>	***	***	***	***

# Glossary of main terms

## 3G contracts

Third generation contracts which were tendered in two phases. NW and SW were tendered first. They have used these contracts since 1 April 2006. NE and SE started to use these contracts on 1 April 2007.

## Budget

Money allocated by Transport Scotland to manage and maintain the network during a financial year. This includes operations and works contracts.

## Category 1 defects

Serious road faults, such as potholes, that should be repaired within set timescales.

## Contract control and management system (CCMS)

A computer-based financial management system supplied and operated by the OCs to a specification provided by Transport Scotland.

The system gives everyone working on the contract, including Transport Scotland and PAG, access to information about how operations and works contracts are being managed and where money is being spent.

## Contract price fluctuation factor (CPF)

Inflation adjustments to the OCs' tendered rates and prices.

## Financial year

The period between 1 April 2008 and 31 March 2009.

## Key performance indicators (KPIs)

The contracts state that a list of indicators must be provided by the OCs to show how they are performing and to allow comparisons between Units.

## Moving cursor programme (MCP)

This analyses accident data across the network to identify accident cluster sites.

## Network

The system of motorways and trunk roads in Scotland. The network is 3,115 km long and varies from urban motorways to rural single carriageways (see [figure 1](#)). In addition, a total of 107 km of motorway is covered by the M6 DBFO and M77 PPP projects.

## Notice of non-conformance (NNC)

The process used in the contract to flag up where the OCs are not complying with the contract. This is issued by PAG.

## Operations

Work carried out by the OCs.

## Orders

Instructions issued by Transport Scotland to the OCs. These give details of operations (not works contracts) to be carried out under the contract by the OCs. The OCs should not start operations until an order has been issued.

## Quality management system (QMS)

Quality management is fundamental to the contracts. A QMS is drawn up by each OC to show how it will carry out every function required of it under the contract.

## Remedial notice

A procedure used under the contract where Transport Scotland can issue a notice when an OC commits a default. This is part of the performance management procedures and may lead to withholding amounts from payment.

## Glossary of main terms

---

### **Routine maintenance management system (RMMS)**

A computer-based system supplied by Transport Scotland and operated by the OCs, to record and report on details of the network, including where it has been inspected and routinely maintained. RMMS also links to the CCMS and is accessible by Transport Scotland and PAG.

### **Sector scheme**

Sector scheme certification is given to suppliers and installers of materials by United Kingdom Accreditation Service (UKAS) accredited certification bodies. This certifies that the holder operates a QMS in line with the international standard, BS EN ISO 9001:2000 and the sector scheme document.

### **SMS**

The structures management system. A computer based management system containing an inventory of information on all trunk road structures. This replaced TRBDb in February 2009.

### **Spend**

The amount paid for work done, including OC operations and works contracts, excluding CPF.

### **Traffic Scotland**

Traffic Scotland, formerly NADICS, manages Scotland's intelligent transport system, which provides a continuous service to the public. Its key functional areas are monitoring, controlling and informing road users.

### **TRBDb**

The trunk road bridges database. A computer based bridge management system containing an inventory of information on all trunk road structures. This system was replaced by the SMS in February 2009.

### **Unit**

The network is divided into four separate geographic Units. These are: NE, SE, NW and SW.

### **Works contracts**

Schemes usually with a value of between £250k and £5m, which the OCs design, procure through competitive tender and supervise on site.



## Acronyms

2G	Second generation	ISO	International Standards Organisation	QMS	Quality management system
3G	Third generation	KPI	Key performance indicators	RMMS	Routine maintenance management system
BS	British Standard	MCP	Moving cursor programme	SE	South East
CCMS	Contract control and management system	NCR	Non-conformance report	SMS	Structures management system
CPF	Contract price fluctuation	NE	North East	SOI	Statement of Intent
CQMSM	Contract quality management systems manager	NNC	Notice of non-conformance	SRWR	Scottish road works register
DBFO	Design, build, finance and operate contract	NW	North West	SUDS	Sustainable urban drainage system
EMS	Environmental management system	OC	Operating company	SW	South West
EN	European standard of the CEN	OHSAS	Occupational health and safety assessment series	TRBDb	Trunk road bridges database
H&S	Health and safety	ORI	Observation resulting from inspection	TRISS	Trunk road incident support service
HAV	Hand-arm vibration	PAG	Performance audit group	TRL	Transport Research Laboratory
		PPP	Public private partnership		

## Useful websites

PAG  
[www.performanceauditgroup.co.uk](http://www.performanceauditgroup.co.uk)

Halcrow  
[www.halcrow.com](http://www.halcrow.com)

PricewaterhouseCoopers  
[www.pwc.co.uk](http://www.pwc.co.uk)

Scott Wilson  
[www.scottwilson.com](http://www.scottwilson.com)

Tony Ham Insurance Brokers  
[www.thibl.co.uk](http://www.thibl.co.uk)

TRL  
[www.trl.co.uk](http://www.trl.co.uk)

University of Dundee  
[www.dundee.ac.uk](http://www.dundee.ac.uk)

Transport Scotland  
[www.transportscotland.gov.uk](http://www.transportscotland.gov.uk)

Traffic Scotland  
[www.trafficscotland.org](http://www.trafficscotland.org)

Scottish Government  
[www.scotland.gov.uk](http://www.scotland.gov.uk)

Scottish Parliament  
[www.scottish.parliament.uk](http://www.scottish.parliament.uk)

Amey  
[www.swtrunkroads.amey.co.uk](http://www.swtrunkroads.amey.co.uk)

BEAR  
[www.bearsco.com](http://www.bearsco.com)

Scotland Transerv  
[www.scotlandtranserv.co.uk](http://www.scotlandtranserv.co.uk)

## **PERFORMANCE AUDIT GROUP**

Halcrow Group Ltd  
City Park, 368 Alexandra Parade  
Glasgow, G31 3AU  
tel +44 (0)41 552 2000  
fax +44 (0)41 552 2025  
[www.performanceauditgroup.co.uk](http://www.performanceauditgroup.co.uk)  
[www.halcrow.com](http://www.halcrow.com)

The **PERFORMANCE AUDIT GROUP**  
has prepared this report in  
accordance with the instructions  
of its client for public distribution.  
Any other persons who use any  
information contained herein  
do so at their own risk.

**PAG accreditation**



**Halcrow Group Ltd**  
**accreditations**

BS EN ISO 9001: 2000  
BS EN ISO 14001: 2004  
OHSAS 18001:2007

