TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

PAG Team

Performance Audit Group's Annual Report 2019/20

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ScotlandTranServ
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making the **difference**

Foreword

Richie Hales
Director
Turner & Townsend
January 2021

This is the Performance Audit Group's (PAG) annual report on the management and maintenance of Scotland's trunk road network for 2019/20.

PAG's role is to audit, monitor and report on the performance of the Operating Companies (OCs) and this report summarises the extensive work carried out by the PAG multi-disciplinary team throughout the year.

2019/20 is the third year of the PAG service being delivered by Turner & Townsend as we continue to provide further value to the road user in this key service area.

Turner & Townsend are a global, independent professional services business, offering independent advice, safeguarding the commercial interests of clients embarking on asset improvement & investment programmes across infrastructure, real estate and natural resources. Turner & Townsend are supported in the delivery of the PAG service by PWC & the Waterman Group.

As the Turner & Townsend appointment matures, the PAG team is working ever closer with Transport Scotland and the OCs to raise standards and provide a safe and reliable network. Our collective focus is to deliver:

- Quality of Service for Trunk Road Customers
- Asset Enhancement and Continuous Improvement of Service
- Value for Money and collectively deliver sustainable value to all stakeholders

The PAG team's approach to the commission is driving improvements through collaboration, independent constructive challenge and continuous improvement with the focus on outcomes being at the forefront of all decisions.

We are taking great pride in playing our part in delivering a great road user experience and we trust you find our latest report clear, comprehensive and informative.

Facts and Figures

Overview

Total length of road
3,118 km

Total number of structures
4,273

Renewing

652km of new road surfacing lane

12.5km of safety fence installed/renewed

2,129 road lights upgraded to LED

1.1km of carriageway drainage constructed/ renewed

17km of filter drain constructed

2.7km of filter stone replaced

320 structures schemes delivered

Facts and Figures

Maintaining

£84.2m spent on road pavement surfacing and deeper inlay schemes

£17.4m
spent on renewal/replacement of various non-pavement trunk road assets (safety barriers, drainage schemes, road markings and signage)

£60.2m
spent on maintenance of highway bridges and structures (such as renewing waterproofing layers to protect the structure, renewing worn expansion joints)

£6.1m
spent on network cyclic maintenance including 95,670 gullies, 67,474 Manholes and Catchpits, 115,391 Traffic signs, and 32 million m^2 of grass.

£4.0m
spent on landscaping and vegetation maintenance including tree felling, branch removal, scrub and vegetation clearance.

£0.5m
spent on structures cyclic maintenance including cleaning drainage, bridge joints, clearing vegetation and graffiti, checking safety fences.

Operating

72,337 tonnes tonnes of salt spread in winter season

17,361 incidents incidents responded to on the trunk road network

Executive Summary

PAG provides ratings on performance [**Excellent** / **Good** / **Fair** / **Poor**]. These are based either on empirical bandings of contractual Performance Indicator (PI) percentages, or as a rating on the Quality of operations observation. The bandings between ratings vary depending on area on delivery.

A key part of the PAG contract is to work with Operating Companies if areas are identified to be in need of improvement. Audit and monitoring programmes are prepared based on areas of delivery risk identified via the PAG Risk Register. Reports are written, with input from the Operating Company (OC), on performance. If required PAG will make recommendations for actions that can be taken for improvement. Notices of Non-Conformance are issued when performance fails to meet the contractual specification which can then be monitored through to closure in the OC's Quality Management System. If any area continues to fall below he required standard, then Transport Scotland may raise a Remedial Notice. Financial deductions to fees paid may also be applied if appropriate.

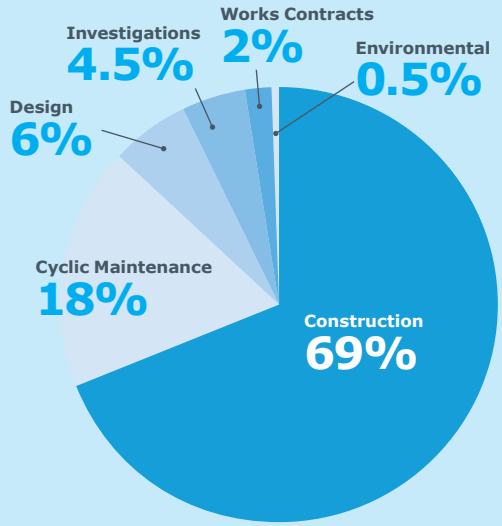
Finance

The budget for **2019/20** was **£220.0m** up **£3.7m** from the previous year (£216.3m)

Transport Scotland's 4G contracts have generated savings through competitive procurement process when compared to prices under its previous contracts for like operations.

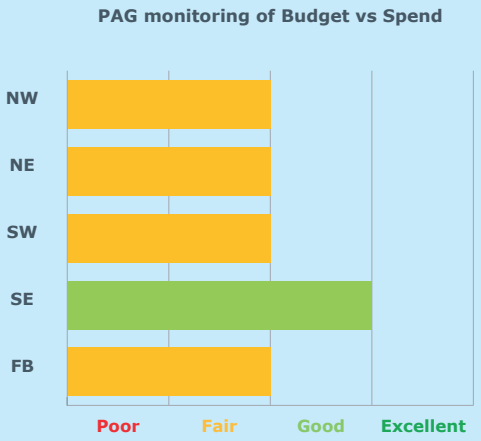
Savings of **£5.8m** have been delivered during **2019/20** with cumulative savings of **£37.9m** delivered to date over the life of the 4G Contracts.

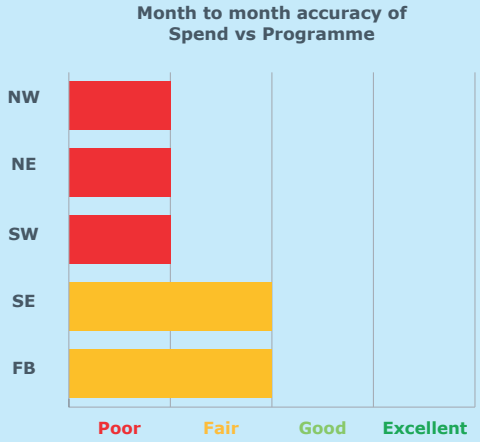
Budget spend split was:



Budgetary Control

PAG monitoring of budget v spend and month to month accuracy of Spend v Programme is shown below.





Executive Summary

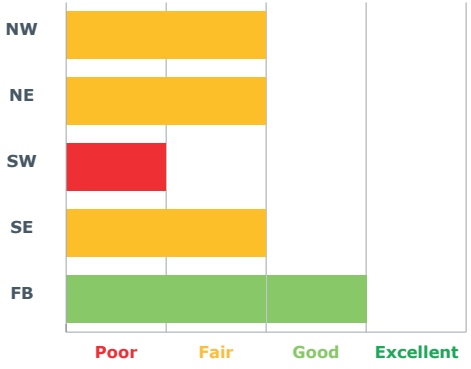
Network Maintenance

Incident Response:
The Performance Indicator for achieving contractual response times was Good in FB, NW and SE units, and Fair in NE and SW.

PAG monitoring the quality of performance in **identifying Category 1 defects** found an excellent performance in FB unit and Good performance in SE, with Fair performance's in NW, NE and SW units.

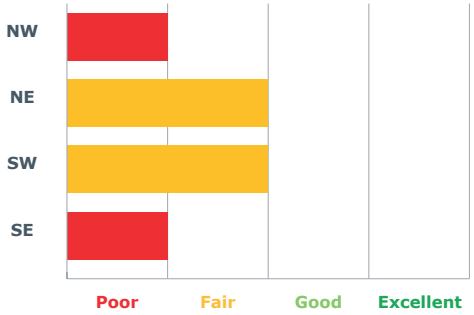
Safety Inspections:
Generally undertaken on time across all units with the PI showing a Good performance, only NW dipping onto a Fair performance.

Repair of Category 1 defects:
Once identified, to undertake a permanent repair within contractual timescales; FB unit achieved a Good performance in this PI, with NW, NE and SE unit's performance Fair. In SW performance was Poor.

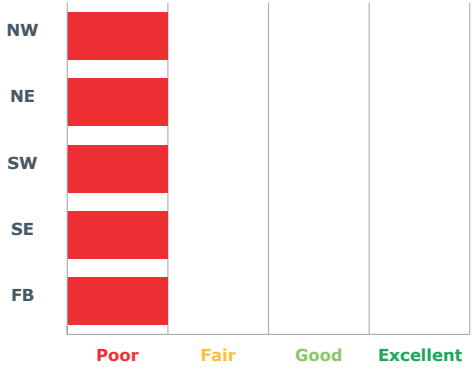


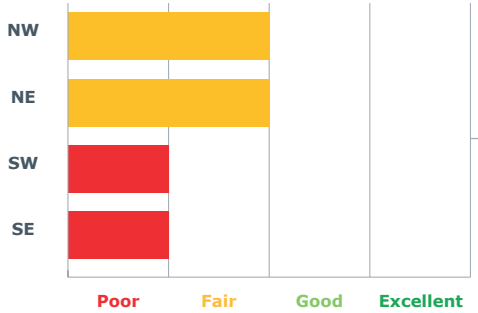
Executive Summary

Detailed Inspections:
PAG review of the quality of Detailed Inspections found a Fair performance in NE and SW units but performance was Poor in NW and SE.



Performance in **recording asset condition rating in the IRIS database** was Poor in all units. A number of Remedial Notices have been raised in this area.

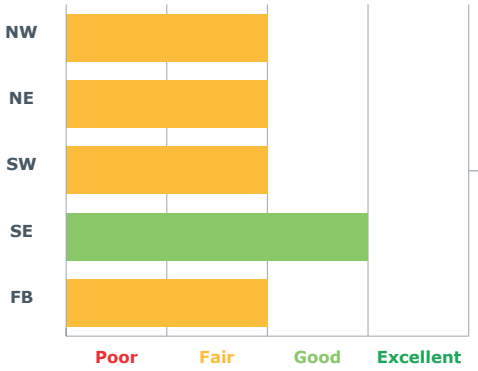




In terms of the PI, performance in **undertaking Detailed Inspections within timescale** remains Poor in SW and SE units, improving to Fair in NW and NE.

Maintenance Schemes:
PAG carried out site visits on a variety of maintenance operations and found the quality of maintenance to be Good in all units.

Executive Summary



Network Cyclic Maintenance: Monitoring exercises undertaken on site by PAG on a variety of Cyclic Maintenance activities found overall quality of performance to be Good in the SE unit, and Fair in all other units.

Structures Cyclic Maintenance: The PI measuring performance in undertaking maintenance against programme found a Good performance in FB and NE units, a Fair performance in SE, and a Poor performance in NW and SW units.

Structures Principle and General Inspections:

Whilst the Performance Indicator measuring achievement of inspections within contractual timescales was generally Good, PAG's review of the quality of operations found issues in progress towards achieving new standards in inspector qualification resulting in Remedial Notices been raised. This reduced overall quality ratings to a Fair performance in FB and SE units, with a Poor performance in NW, NE and SW units. Remedial Notices have since been closed with progress improved.

PAG reviews of the **quality of operations** found a Fair Performance in FB, NW and NE units. A Poor performance was noted in SW and SE with Remedial Notices issued which remained open at the end of the annual period.

Executive Summary

Customer Care:
PAG audits of performance in the quality of Customer Care requirements found a Good performance in all units except SW where performance was Fair.

Winter Service:
PAG reviews of the quality of daily treatment planning and records found performance to be Good in all units.

Environmental and Sustainability:
An overall Good performance was averaged in all units except Forth Bridge which was Fair in audits of environmental management systems and environmental performance on site.

High percentages were also noted (95% to 100%) in recycling of waste materials.

Whilst the Performance Indicator measuring **Winter Service Treatments** found a Good performance in FB, NW and NE units and a Fair performance in SW and SE.

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Introduction

The Performance Audit Group (PAG) contract undertakes auditing and monitoring of Operating Company (OC) performance to check compliance in delivering the 4th Generation Term Contract for Management and Maintenance of the Scottish Trunk Road Network.

In the 2019/20 annual period there were five Term Maintenance contracts operated by three companies:

- **BEAR Scotland Ltd.** - NW & NE units
- **Scotland TranServ** - SW unit
- **Amey Plc.** - SE & FB unit (Forth Bridges)

Report Structure

This report has been structured around the objectives of Transport Scotland's 'Scottish Trunk Road Network Asset Management Strategy – November 2018'. A separate chapter covers each objective. The content of each chapter follows an exercise undertaken by Transport Scotland (TS) to map differing areas of contract delivery to each objective.

PAG is stated in the Network Asset Management Strategy as forming a central part in monitoring performance of Operating Companies which in turn is part of the strategy to achieving these objectives.

Performance Ratings

PAG utilises a risk-based approach to assessing contract performance. A risk register, populated with the key risks to delivery, is updated quarterly to keep it focussed on current issues. Audit and monitoring programmes are developed from this register and core activities, subject to amendment as the year progresses depending on changing circumstances.

From the results of PAG reporting OCs are given ratings from **Excellent** (full compliance with contractual requirements), to **Good**, **Fair** and **Poor**. These are colour coded in the tables throughout this report.

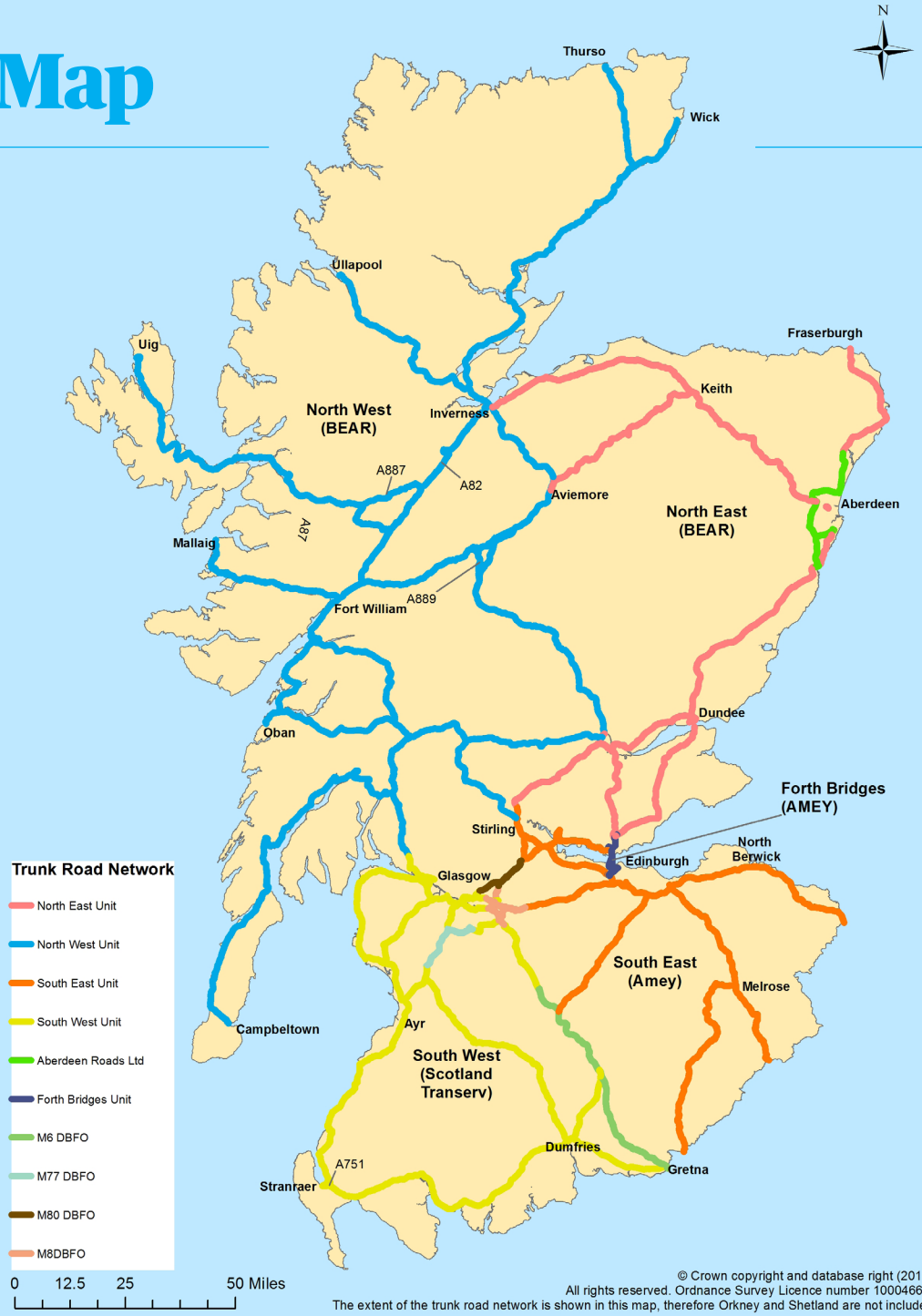
There are two key areas in which these ratings are applied:

- **Performance Indicators:** the term maintenance contracts contain Performance Indicators (PI) which are generally numerical percentages measured via either data entered into the Integrated Roads Information System (IRIS), or from data held by the OCs. These are generally quantitative in nature based on programme completion with no inherent measure of the quality of operations. The bandings between Excellent/Good/Fair/Poor for the various Performance Indicators vary depending on the PI in question.

- **Quality of Operations:** The audit and monitoring programmes undertaken by PAG focus on the quality of operations with ratings based on performance observed.

Ratings in each section throughout the report are an average of all aspects of an Operating Company's performance throughout the annual period. Ratings are amalgamated from individual reviews of operations undertaken by PAG, for any areas in which a Notice of Non-Conformance or Remedial Notice is raised, and for Operating Company response to areas highlighted by PAG in which quality could be improved.

Scottish Trunk Road Map



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The extent of the trunk road network is shown in this map, therefore Orkney and Shetland are not included.

Safety

> **To provide a road network that is safe for all users, seeking to continually reduce risk and casualties**

Safety Inspections

Operating Companies (OC) undertake Safety Inspections principally to identify and make safe Category 1 defects. The Performance Indicator (PI) measuring compliance in undertaking Safety Inspections to contractual timescales is shown in Figure 1 & Figure 2.

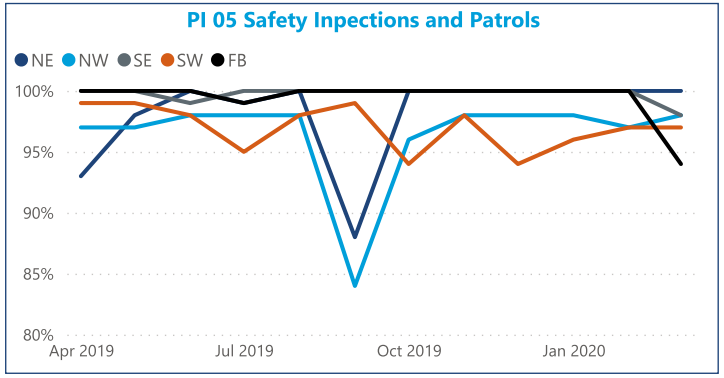

Figure 1

Figure 1 shows the monthly Performance Indicator for each unit over the full annual period, Figure 2 provides the average PI over the annual period.

PI	FB	NE	NW	SE	SW
PI 05 - Safety Inspections and Patrols	99.4%	98.2%	96.4%	99.8%	97.0%

Figure 2

PAG also undertakes further monitoring as a check on the quality of inspections via route tours with ratings based on the percentage of Category 1 defects PAG noted as missed by Operating Companies with Observations Resulting from Inspection (ORIs) raised by PAG if issues on non-compliance are noted (Figure 3).

PAG route tours generally found the ratio of Cat 1s noted to have been missed by Operating Companies ranging from 4.9% in the SW unit to 9.8% in the SE unit. There were virtually no Cat 1 ORIs noted in the FB unit as would be expected from the new status of the majority of the carriageway.

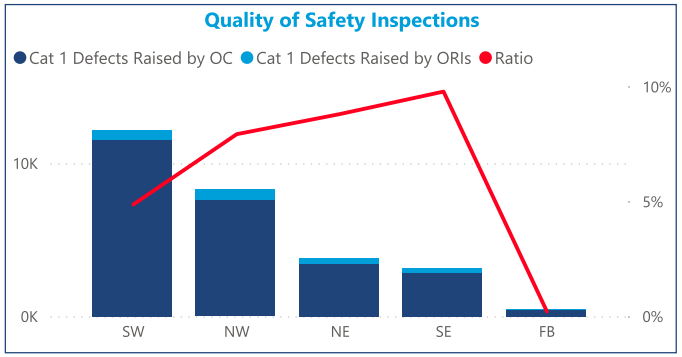

Figure 3

Despite the higher percentage of Cat 1 defects missed in the SE unit the overall Quality of Safety Inspection performance (Figure 4) was noted as Good due to performance in responding and resolving ORIs. Overall performance in NW, NE and SW was Fair whilst FB it was Excellent.

Quality of Safety Inspections	FB	NE	NW	SE	SW
Safety Inspections					

Figure 4

Safety

Figure 5 shows the number of Cat 1 ORIs raised by PAG by category. It can be seen from the overall totals that 'drainage' has the greatest number followed by 'signs, road markings and studs' then 'potholes', although the proportions of each of these top three categories varies between units.

Defect Category	FB	NE	NW	SE	SW	Total
Drainage, gullies and ironwork		106	92	136	237	**571**
Signs, road markings and studs		108	292	56	79	**535**
Potholes (and other c/way)	1	77	193	50	127	**448**
Electrical and lighting		6	4	16	62	**88**
Soft landscaping		13	33	9	9	**64**
Safety fences, barriers and fences		8	15	11	21	**55**
Sweeping, cleaning and litter		6	2	16	25	**49**
Weed control		3	4	8	17	**32**
Miscellaneous		3	9	2	1	**15**
Structures graffiti				1	13	**14**
Footways			6			**6**
Structures joints			2		2	**4**
Grass cutting		1	1	1		**3**
Structures miscellaneous			2			**2**
Structures Parapets			2			**2**
RMMf/ IRIS			1			**1**
Traffic management			1			**1**
Sustainability monitoring						
Winter service						
Total	**1**	**331**	**659**	**306**	**593**	**1890**

Figure 5: Total number of ORIs raised by category

Monitoring Indicator (MI) 01, Well Lit Network, provides a measure of the percentage of lighting units on the network which are operational in each month. MI 13 measures the OCs performance in responding to ORIs raised by PAG. Figure 6 provides an average figure over the annual period.

MI	FB	NE	NW	SE	SW
MI 01 - Well lit network	92%	96%	96%	97%	93%
MI 13 - Responses to Observations Resulting from Inspections and Hazard Notices	100%	100%	99%	100%	89%

Figure 6

Repair of Cat 1 Defects

Repair timescales for Cat 1 defects once identified and entered into the asset management system (IRIS) is measured via Performance Indicator 03. Figure 7 shows the monthly Performance Indicator for repair of identified Category 1 defects within contractual timescales whilst Figure 8 provides the average value over the annual period.

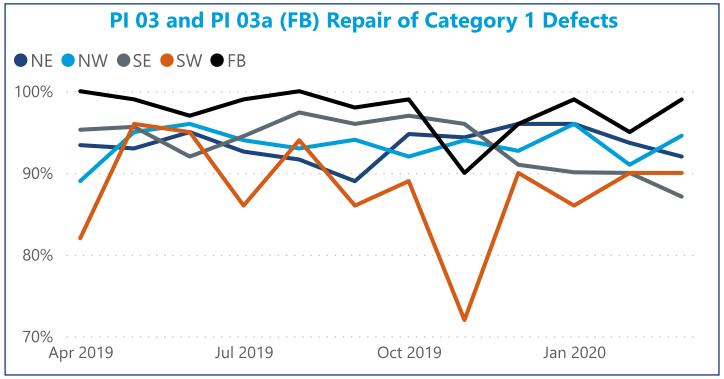

Figure 7

Safety

Of note is the low figure for SW unit in November 2019 which was due to inputting a high number of road marking defects captured via automated surveys into the IRIS system and then working through the repairs. Although this caused a short-term dip in the PI, the approach to input all such defects into IRIS should be commended.

PI	FB	NE	NW	SE	SW
PI 03 and PI 03a (FB) - Repair of Category 1 Defects	97.6%	93.5%	93.4%	93.5%	88.0%
PI 03b - Repair of Category 1 Defects - Forth Road Bridge	100.0%				

Figure 8

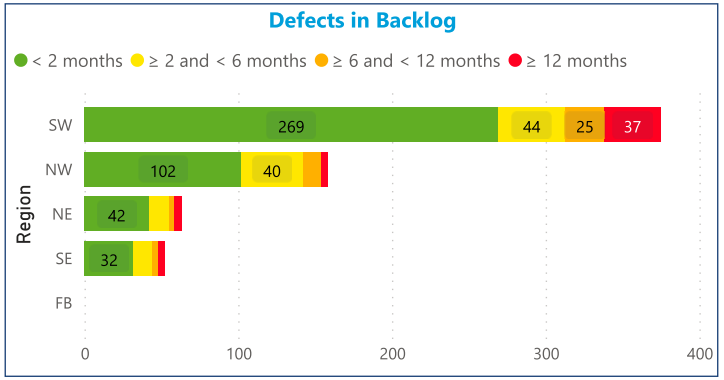

Figure 9: Defect Backlog April 2019

PAG also monitors the number of defects in the backlog, i.e. defects which have gone beyond their contractual repair timescale without repair.

Figure 9 & Figure 10 show the number of defects in the backlog at the start and end of the annual period.

FB performed well in the repair of identified defects.

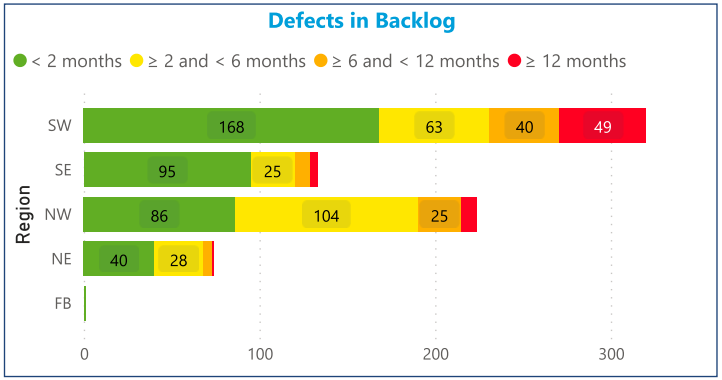

Figure 10: Defect Backlog March 2020

NW, NE and SE performance was Fair. SW performance was Poor in both the repair timescales and in the volume of defects that built up in the backlog. NW and SE units also had a high number of defects built up in the backlog over the course of the annual period.

Hazard Notices

PAG has the facility to issue Hazard Notices where it observes a hazardous situation on the network. During the reporting period PAG had issued a total of 18 Hazard Notices. Typically, the OCs ensured Hazard Notices were responded to within the contractual timeframes. The most common cause of Hazard Notices were in relation to unsafe iron work with a number of hazards in the SW and NW units relating to exposed electrical wiring. Note there were no Hazard Notices raised in the FB unit.

Hazard Notices	NE	NW	SE	SW
HAZ	7	7	3	8

Figure 11

Safety

Winter Service

Operating Companies provide winter services to ensure the trunk road is kept free of snow and ice throughout the winter period. Performance in providing winter service is measured via Performance Indicator 11 (Figure 12) which is a combined measure incorporating planned winter salt treatment operations being carried out in the timescales planned, unplanned treatment call out response times and data logger download achievement. Achievement was consistently high across all units with slights dips noted in SE and SW units caused by disproportionate impact to the PI of a small number of unplanned treatments not meeting the contractual timescales.

PI	FB	NE	NW	SE	SW
PI 11 and PI 13 (FB) - Winter Service treatments	99.6%	99.1%	99.6%	97.3%	96.5%

Figure 12

PAG also undertakes an audit of Winter Preparedness at the start of the winter period, along with various reviews each month of performance in delivering the winter service throughout the winter period. Ratings for the overall quality of winter service provision is set out in Figure 13. Overall the winter service provided was Good in all units with only minor issues noted generally around the provision of records.

Quality of Winter Service	FB	NE	NW	SE	SW
Winter Service					

Figure 13

Monitoring Indicator 20 (Figure 14) sets out the accuracy of the weather forecasts obtained by the Operating Company as an average over the full winter period.

MI	FB	NE	NW	SE	SW
MI 20 - Weather Forecast Accuracy	95%	95%	69%	99%	96%

Figure 14

Incident Response

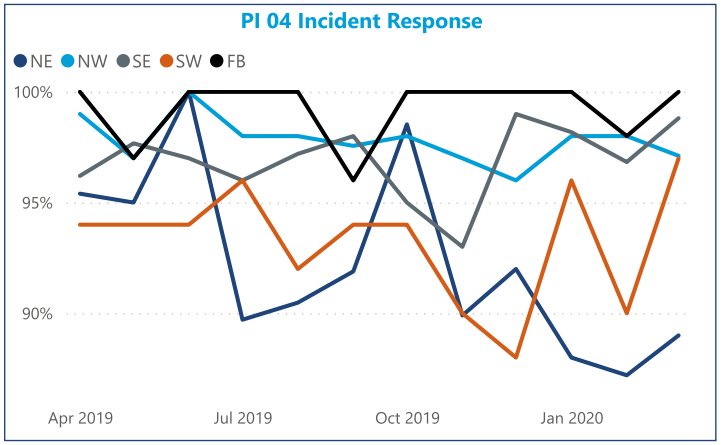

Figure 15

Operating Companies have requirements to ensure the trunk road network is kept free flowing as far as possible, and part of their remit is to provide Incident Response services to assist to remove or alleviate any incident that is causing disruption to the network. Performance Indicator 04 (Figure 15) measures the response time from notification to attendance at site. Figure 16 shows the average PI over the annual period.

PI	FB	NE	NW	SE	SW
PI 04 - Incident Response	99.3%	92.3%	97.8%	96.9%	93.3%

Figure 16

Safety

PAG may be asked to review specific incidents and performance around such incidents to provide a rating on the Quality of Incident Response operations (Figure 17). In the 2018/19 annual period one such review took place in the SW unit, a desktop monitoring exercise on the recording of flooding incidents which found issues in the information recording within IRIS. To provide further insight to performance in this area, both records and performance on the ground, PAG will undertake a larger number of reviews in future annual periods.

Figure 17

Contractors Health & Safety and CDM

PAG undertakes many visits to the site of roadworks operations over the course of an annual period. An overview of on-site Health & Safety performance is noted for each site visited. PAG also undertakes an audit each year of CDM and general Health and Safety requirements. Overall performance in this area is set out Figure 18. Whilst performance in site ranged from Excellent to good, the audits undertaken did find minor issues in the NW unit, whilst a Fair performance was noted in FB unit generally due to incomplete records.

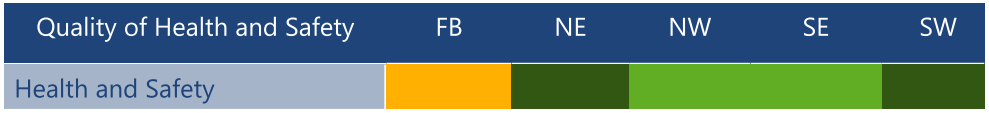

Figure 18

There are also Performance Indicators, 01 and 02, on RIDDOR and Accident Frequency rate (Figure 19).

PI	FB	NE	NW	SE	SW
PI 01 - RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations)	0.0	0.0	0.2	0.0	0.4
PI 02 - Accident Frequency Rate	2.3	1.1	1.3	0.9	2.8

Figure 19

Condition

> **To measure and maintain our trunk road assets in a condition that meets the needs of our users but which is also affordable**

Detailed Inspections

Operating Companies are contractually required to undertake Detailed Inspections, a walked inspection of all assets on the network, generally annually, although certain assets have differing periods. This inspection is generally intended to identify and record in IRIS Category 2 defects as well as inventory condition rating. Performance Indicators in the contract measures compliance in undertaking these inspections within the timescales required (Figure 20 & Figure 21). Note that PI 21, recording Inventory Condition rating was not included in the NW and SW contracts however PAG records the measure and has included here for comparison.

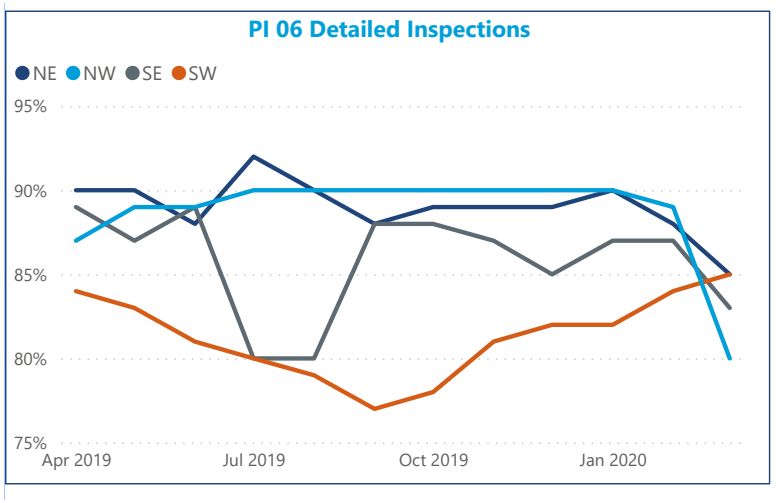

Figure 20

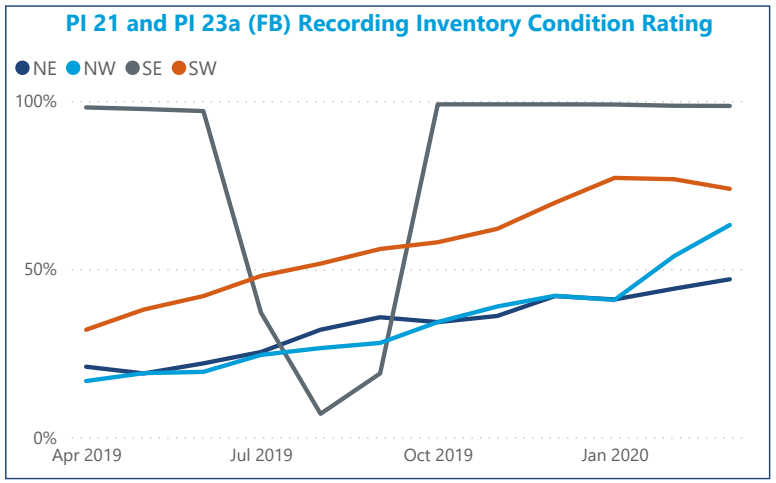

Figure 21

PI	NE	NW	SE	SW
PI 06 - Detailed Inspections	89.0%	88.7%	85.8%	81.3%
PI 21 and PI 23a (FB) - Recording Inventory Condition Rating	33.3%	34.0%	79.1%	57.1%

Figure 22

Note: Accurate figures for FB are not available due to the partial nature of the handover of assets and ongoing issues with the inventory database following construction of the Queensferry Crossing.

Condition

PAG also undertakes monitoring exercises and audits to check on the quality of Detailed Inspections (Figure 23).

Quality of Detailed Inspections	FB	NE	NW	SE	SW
Detailed Inspections					

Figure 23

None of the units performed well in undertaking Detailed Inspections. PAG monitoring exercises found that the assets on the network did mostly match the asset contained in the Asset database IRIS. However, all units, with the exception of SE, did not meet timescales for undertaking these inspections on a regular annual basis. Condition Ratings against assets were often found to differ from PAG assessment. At the start of the annual period there were Remedial Notices remaining open since 2015 in SW and SE units, and since 2018 in NW and NE units. The RN in SE was subsequently closed but the RNs in SW, NW and NE remained open at the end of the annual period.

This aspect of contract delivery remains high in the PAG Risk Register and will subsequently remain in ongoing PAG audit and monitoring programmes.

Case Study

Scotland TranServ SW

Enterkinfoot Road Realignment

Inspections of the A76 between Sanquhar and Thornhill revealed that the supporting embankment between the trunk road and the River Nith was showing signs of movement. The trunk road was immediately reduced to a single lane to take vehicles away from the compromised safety barrier, reducing the wider pressure on the embankment.

Geotechnical ground investigations were undertaken with a series of engineering options identified. Working in collaboration with Transport Scotland, a final solution was identified and Scotland TranServ initiated the detailed design process.

The A76 is a lifeline for a number of communities, linking Dumfries and Galloway to Ayrshire. Because of the complexities of the programme, and the lengthy ground investigation and design phase, it was essential that Scotland TranServ continued to keep communities updated. This involved engagement events at Thornhill, Sanquhar and Galloway Country Fayre, distribution of project postcards providing information and contacts and radio and newspaper adverts keeping drivers updated on key developments.

Road safety measures were implemented with the A76 moved away from the embankment, and previous sharp bends straightened to reduce risk to drivers.

The team also worked in collaboration with SEPA to ensure environmental measure was taken to protect the sensitive ecology of the area including; new drainage designed on either side of the new trunk road with filter drains and catch pits to protect the sensitive environment, surface water drainage outfalls were inserted with rock mattresses to break the powerful flow of water, reducing risk of erosion to river bank.

Condition

Cyclic Maintenance

Cyclic Maintenance is undertaken on a range of asset types including, amongst other elements, cleaning of drainage, cleaning of sign faces, grass cutting and weed control. Performance is measured via a contractual Performance Indicator (Figure 24) which measures the number of assets which are recorded as having cyclic maintenance undertaken within contractual timescales.

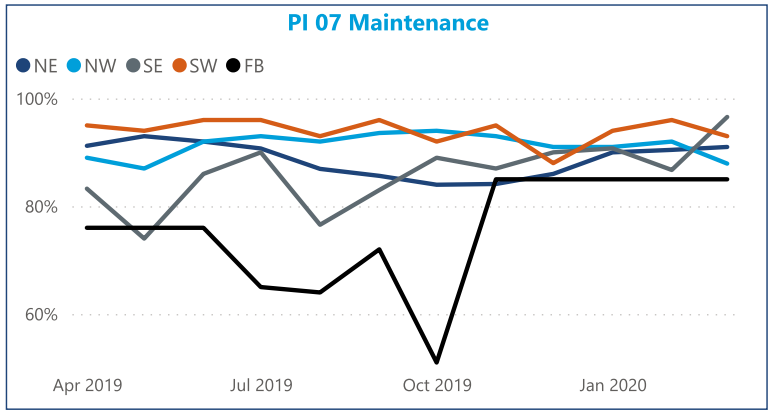

Figure 24

Figure 25 shows the average figure over the annual period.

PI	NE	NW	SE	SW
PI 07 - Maintenance	88.8%	91.3%	86.1%	94.0%

Figure 25

Note: Accurate figures for FB are not available due to the partial nature of the handover of assets and ongoing issues with the inventory database following construction of the Queensferry Crossing.

PAG adds to this measure via monitoring activities on the quality of work done against the contract requirements (Figure 26). Issue were noted in all units around drainage maintenance, with some issues also noted around litter clearance.

Network Maintenance	FB	NE	NW	SE	SW
Cyclic Maintenance					

Figure 26

Maintenance Schemes

A key aspect of the many visits to roadwork sites undertaken by PAG is to review; the standards of workmanship to the correct specification, the supervision provided on site and records kept of works done.

A variety of different sites are visited including but not limited to operations such as carriageway resurfacing, drainage improvement, VRS replacement schemes and landscaping works. Figure 27 shows the overall quality performance which was generally always of a good standard. Performance against spend profiles and budgets, measurements and cost control are reported through OI and Measurement reviews and the spend to budget, reported in the finance section.

Network Maintenance	FB	NE	NW	SE	SW
Network Maintenance Schemes					

Figure 27

Condition

Case Study

BEAR NE

A92 Ladybank resurfacing

This scheme was developed to improve the road condition of a section of the A92 near Ladybank. Inspection found a hazardous concentration and composition of coal tar in the lower layers. The structural condition of the pavement necessitated that the coal tar bound materials needed to be removed, and either disposed of or incorporated into a cold recycled bound material which could be used to form the base layers of the reconstructed pavement.

Due to the significant environmental benefits, the option to re-use the material as a cold recycled bound layer in the road makeup was utilised.

The pavement maintenance works comprised removal of lower 225mm of AWCCT and transportation to a mobile processing plant where it was crushed and screened, followed by addition of binder and fillers. The remixed material was transported back to site and laid in a standard manner.

Before

After

As a result of these works an estimated 50% reduction in carbon emissions was achieved compared to using a virgin hot mix asphalt. Savings estimated at £350,000 were also achieved by reusing and reprocessing the tar bound material. The structural condition of the carriageway is now significantly improved, along with the ride quality, with a 40 year design life achieved.

Structures Principal and General Inspections

Operating Companies are required to undertake inspection of all bridges and other structures on the trunk road network at regular intervals. There are several structures out with the trunk road boundary which are also inspected. General Inspections (GI) are to be undertaken every 2 years with a Principal inspection (PI) every 6 years. The contractual Performance Indicator for Principal Inspection (Figure 28) and General Inspections (Figure 29) is a measure of achievement of inspections against programme. Figure 30 shows the average PI over the annual period.

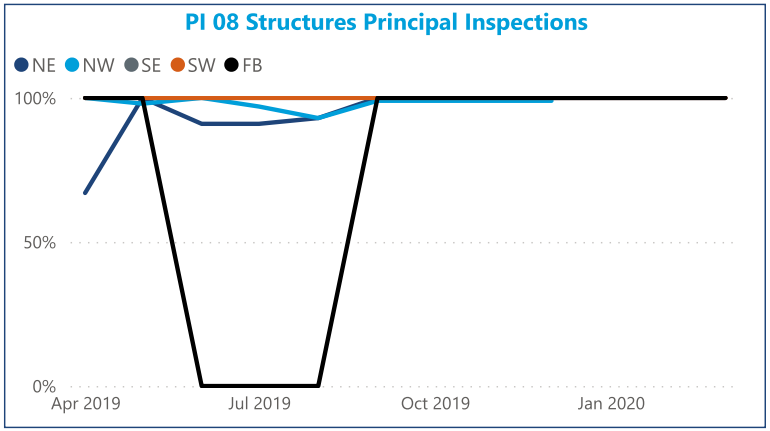

Figure 28

Condition

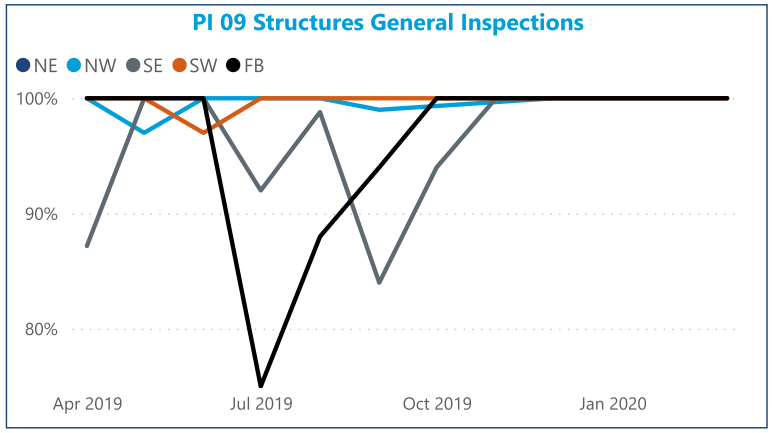

Figure 29

PI	FB	NE	NW	SE	SW
PI 08 - Structures Principal Inspections	75.0%	95.2%	98.0%	100.0%	100.0%
PI 09 - Structures General Inspections	96.4%	98.9%	99.4%	96.3%	99.8%

Figure 30

The Poor performance in FB unit for Principal Inspections was noted due to reports for inspections in the initial months of the programme not being submitted into SMS. These were fully in place by August 2019 following which the PI remained at 100% for the remainder of the year (Figure 28).

PAG undertakes reviews of the Principal and General Inspection reports produced by Operating Companies also visiting the structures on site to assess the Quality of the inspections. PAG noted issues resulting in ratings from Fair to Poor for NW, NE and SW units, while SE and FB unit were rated as Good. All units however had remedial notices raised for non-compliance with Bridge Inspection Certification Scheme (BICS) resulting in overall reduction in the ratings averaged over the year. It is noted that there were issues outwith the Operating Company's control which slowed progress in gaining accreditation in the BICS system, however despite these restrictions performance could have been better. All Remedial Notices were closed in October 2019 with performance showing improvement.

Quality of Inspections	FB	NE	NW	SE	SW
Principal and General Inspections					

Figure 31

Resilience and Prosperity

> **To provide consistent, predictable and reliable journeys for the movement of people and goods, and to minimise disruption caused by roadworks, unplanned incidents and severe weather conditions**

Journey Time Reliability

Operating Companies have requirements to ensure roadworks do not cause undue disruption on the network. There is a dedicated position within the contract, the Journey Time Reliability Coordinator (JTRC), who's role it is to liaise with Local Authorities, Police Scotland and other Operational Partners and to coordinate roadworks for minimal disruption. Measurement of performance is covered partially by Monitoring Indicator 03 (Figure 33), supplemented by either audits undertaken by PAG or reviews of particular incidents that fall into this category. No audits were undertaken in 2019/20 as audits in the previous year generally found a Good performance. In the 2019/20 reporting period reviews were undertaken of traffic management of roadworks in the NW unit which found a good performance. A Remedial Notice was issued to the SE unit for failings in the JTRC role that led to traffic problems during a maintenance scheme on the A1.

Network Operations	FB	NE	NW	SE	SW
JTRC & Traffic Management					

Figure 32

MI	FB	NE	NW	SE	SW
MI 03 - Traffic disruption caused by un-programmed work	6,106	417,873	1,490,164	206,722	1,465,883

Figure 33

A key part of the resilience of journey time reliability on the trunk road network is use of de-icing materials in the winter period to ensure the roads and snow and ice free. Figure 34 shows Monitoring Indicator's on usage of salt (all units) and potassium acetate (Forth Bridge unit only). This measure is of the percentage used in relation to the first year of the Contract as a benchmark. Figure 35 shows in tonnes the full volume of salt used in the annual period.

Salt Usage	FB	NE	NW	SE	SW
MI 19 & MI 19a (FB) - Salt Usage	40%	397%	115%	23%	100%
MI 19b - Potassium Acetate Usage	40%				

Figure 34

Winter Period	FB	NE	NW	SE	SW	**Total**
2019/20	1,041	16,699	25,676	13,018	13,471	**69,905**

Figure 35: Salt Usage in Tonnes

Resilience and Prosperity

Disruption Risk Management

The Operating Companies have various requirements centred around their Disruption Risk Management Plan. This umbrella plan incorporates various other Plans such as severe weather plans, landslide plans, various incident response plans and a register of risk sites. Figure 36 shows the overall Quality of performance in this area was generally Good.

Quality of DRMP	FB	NE	NW	SE	SW
DRMP					

Figure 36

Structures Maintenance

PI	FB	NE	NW	SE	SW
PI 10 and PI 12a (FB) - Structures maintenance	99.5%	96.5%	84.6%	94.1%	88.7%
PI 12b - Structure maintenance – Forth Road Bridge	100.0%				
PI 27a - Access Systems inspection - Forth Road Bridge	99.6%				
PI 27b - Access Systems maintenance and testing – Forth Road Bridge	100.0%				
PI 29 - Programmed Special Inspections – Forth Road Bridge	100.0%				

Figure 37

Cyclic maintenance is undertaken on all structures bi-annually to keep structural elements clean and in good working order. Performance Indicators (Figure 37) measure performance against programme for undertaking cyclic maintenance.

Figure 38 gives the average rating by PAG on the quality of operations. Issues were found in all units not meeting the full specification requirements on site and in the recording of work done in IRIS. Notices of Non-Conformance were received by NW, NE, FB and SE units for performance in undertaking structures cyclic maintenance, whilst Remedial Notices were also received by SW and SE units.

PAG continues to monitor closely this area of contract delivery to work with OCs to identify areas requiring improvement.

Structures Maintenance	FB	NE	NW	SE	SW
Cyclic Maintenance					
Risk Programmes					
Structures Investigations					
Structures Maintenance Schemes					

Figure 38

Resilience and Prosperity

In addition to Cyclic Maintenance PAG also reviews OC performance in relation to various maintenance schemes via visits to site operations. The Quality of operations found in these visits was found to range from Excellent to Good (Figure 38).

In the Risk Programmes aspect of structures maintenance OCs identify, investigate, monitor and, if required, undertake maintenance on structures which are potentially at risk of developing certain issues. Whilst no performance reviews were undertaken by PAG in 2019/20, it is noted a Remedial Notice remained open in the SW unit for performance in relation to half joints.

Structures Investigations shows the results of various reviews undertaken by PAG of differing aspects of structures maintenance requirements. In the 2019/20 annual period PAG reviewed performance in updating records for work done in SMS, and in maintenance of structures outwith the trunk road boundary (Figure 38).

Case Study

Amey FB

Forth Bridge Runway Beam Replacement

To maintain elements such as the main deck of the Forth Road Bridge, access is required. Two underdeck gantries are in place to provide this access, and these gantries are supported by runway beams. These beams had come to the end of their design life and were showing signs of deterioration. To ensure the continued safe operation of the suspended gantries Amey designed a replacement strategy to renew the existing gantry runway beams with a beam of larger capacity.

In order to replace the runway beams it is necessary to gain access to the underside of the existing beams. As an alternative to installing suspended hanging scaffolding (with the exception of the first beam to be replaced on each span), Amey designed bespoke access cradles, which were suspended from the runway beams.

Following on from the design Amey undertook an advanced buildability trial. The trial location was at the north side span replacing 10 beams on the east and west sides of the structure. A report of lessons learned was compiled and Amey tendered the replacement of the remaining 2800m of runway beams in October 2019.

Customer Care and Travel Info

> **To provide customers with up-to-date, reliable travel information and support the level of satisfaction in trunk road services**

Customer Care

In reviewing the performance of Operating Companies in providing customer care, PAG undertakes audits against contractual requirements for responding to and interacting with members of the public. This may also include requirements around providing travel information that assist the public in journey making decisions. Figure 39 gives the PAG ratings for performance in this area. Audits found a Good performance in all units except NW which was Excellent, in fulfilling requirements around customer care. A review in handling third party claims found a good performance in all units except SW where performance was Poor.

Quality of Customer Care and Travel Information	FB	NE	NW	SE	SW
Customer Care and Travel Information					

Figure 39

There are also two Performance Indicators (Figure 40) that measure this aspect of contract delivery.

PI	FB	NE	NW	SE	SW
PI 18 and PI 20 (FB) - Communications response	99.1%	99.7%	98.9%	93.5%	100.0%
PI 24 - Community Engagements and Community Benefits	100.0%				

Figure 40

Case Study

Amey SE

Galafoot Bridge Parapet Replacement

A number of reported self-harm events in a short period of time between July 2018 and January 2019 prompted a meeting between Amey / TS / local councillors / MSPs / Police Scotland / Scottish Fire and Rescue, local Samaritans and NHS mental health groups. Following this meeting, TS considered and took forward engineering measures to increase the existing 1m high vehicle parapet system and access to the deck ends to deter further self-harm at this location.

Amey quickly undertook the necessary technical checks to ensure that a new 1.8m high parapet system was compatible with the structure and immediately progressed with detailed design.

It is important to note that Amey were on site to carryout phase 2 of the planned bridge deck refurbishment works at Galafoot Bridge and that TM was therefore already in place. A new parapet system along with updated Samaritans signage was installed immediately following completion of the bridge deck refurbishment works and within a very short period of time following these works being identified.

The main benefits of this scheme are the restricted means for future self-harm incidents and the efficiency in combining additional improvement works to take advantage of existing TM and hence mitigate the effect on journey times.

Accessibility and Integration

> **To provide a network that is accessible to all users, with improved connectivity, and to ensure that traffic moves freely and quickly across Scotland**

Barriers to Accessibility

PAG also undertakes audit against the contractual requirements on identifying and removing barriers to accessibility on the network. This is either the construction of items of infrastructure that aid the use of the network for disabled users, pedestrians, cyclists and equestrian, or the removal of infrastructure that is obstructive to these user groups. PAG in general found a good performance in the audits undertaken in the 2019/20 annual period with the exception of SE unit where performance was Fair due to a number of risks identified on process.

Quality of Barriers to Accessibility	FB	NE	NW	SE	SW
Barriers to Accessibility					

Figure 41

Dealing with the Planning Applications which affect the trunk road network is part of this aspect of accessibility and integration. There is a PI (Figure 42) which demonstrates performance in this area.

PI	FB	NE	NW	SE	SW
PI 17 and PI 19 (FB) - Planning applications	100.0%	99.3%	98.8%	95.8%	98.5%

Figure 42

Network Availability

Operating Companies will inevitably need to close parts of the network to undertake maintenance operations. MI 02 (Figure 43) provides a measure (in lane/km/hours) of the network availability.

MI	FB	NE	NW	SE	SW
MI 02 - Network availability	0.085	0.033	0.006	0.029	0.014

Figure 43

Value for Money and Innovation

> **To make economic and efficient use of available resources for road maintenance and foster innovation in all aspects of work**

Financial Management of Programmes

Financial Overview

Reported spend figures are inclusive of contract price fluctuations (CPF) unless otherwise stated.

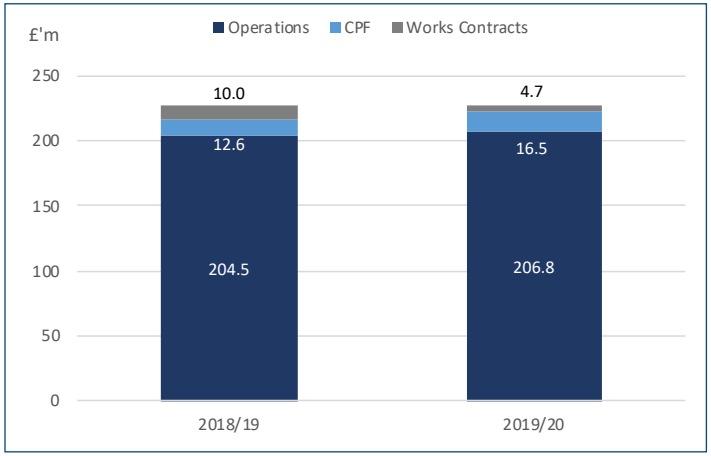

Figure 44: Spend v Budget (excluding CPF) all Units

A comparison of spend figures for 2019/20 and 2018/19 is shown in Figure 44. Total spend for 2019/20 is £228.1m (2018/19: £227.1m).

The budget for 2019/20 of £220.0m (net of CPF), which is an increase of £3.7m (1.7%) from the previous year (see Figure 45).

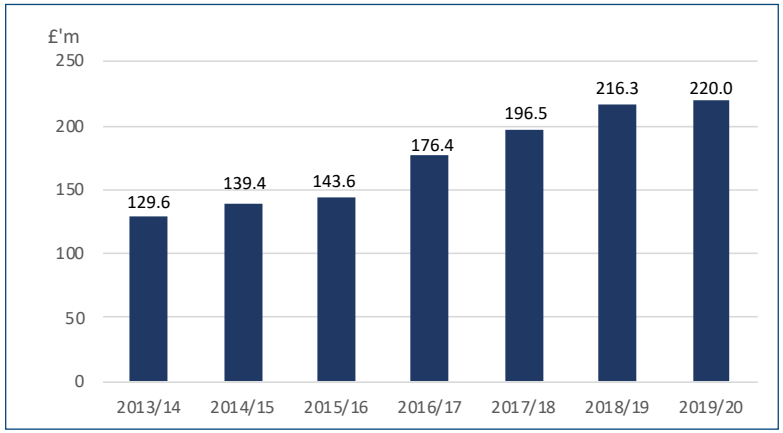

Figure 45: Comparison of budgets (net of CPF) for maintenance and improvements

Spend net of CPF for 2019/20 is £211.6m (2018/19: £214.5m), which is £8.4m less than budget.

For 2019/20, CPF payments totalled £16.5m on operations priced at base rates totalling £206.8m. The CPF figure for 2018/19 was £12.6m on operations priced at base rates totalling £204.5m.

Transport Scotland's 4G contracts have generated savings through competitive procurement process when compared to prices under its previous contracts for like operations. Savings of £5.8m have been delivered during 2019/20, with cumulative savings of £37.9m delivered to date over the life of the 4G contracts.

Value for Money and Innovation

Spend Analysis

Transport Scotland reports a network asset valued at a net £14.15bn for roads and £6.77bn for structures. In maintaining its asset, Transport Scotland spent £228.1m during 2019/20 (2018/19: £227.1m). Figure 46 shows how this spend was allocated by asset type and operational activity during the year, whilst Figure 47 giving a breakdown by the differing types of activity. Note that in Figure 47 the heading 'Other' is mostly comprised of cyclic maintenance activities.

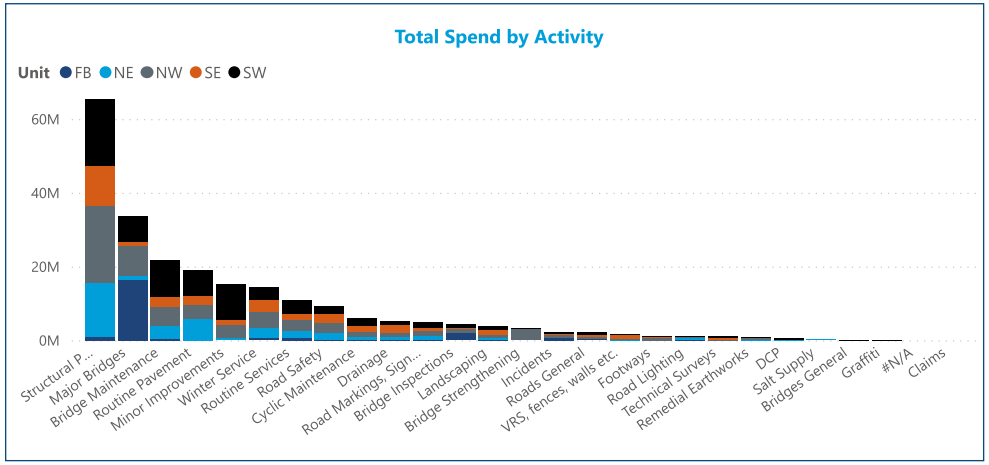

Figure 46

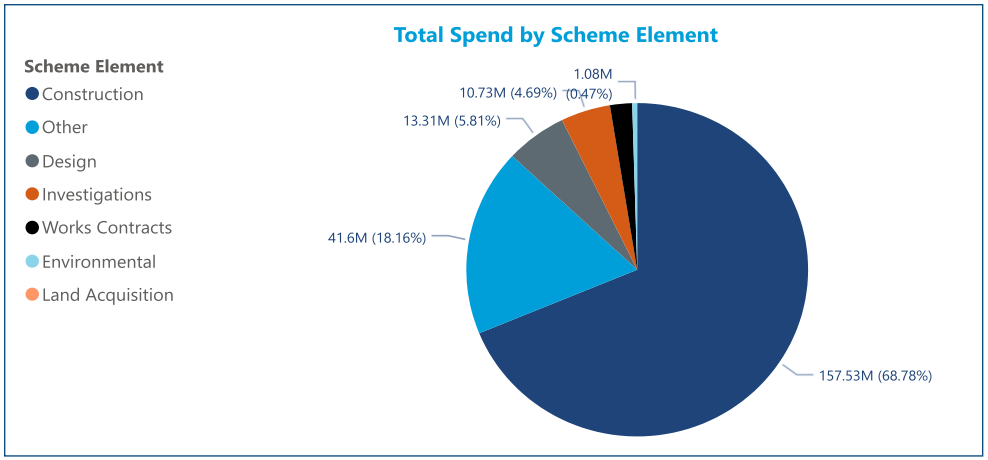

Figure 47

Budget, Spend and Programmes

PAG monitors and reports on the inter-relationship of budget, orders and spend to assist Transport Scotland in its financial management. How this fit into the overall process is shown in Figure 48.

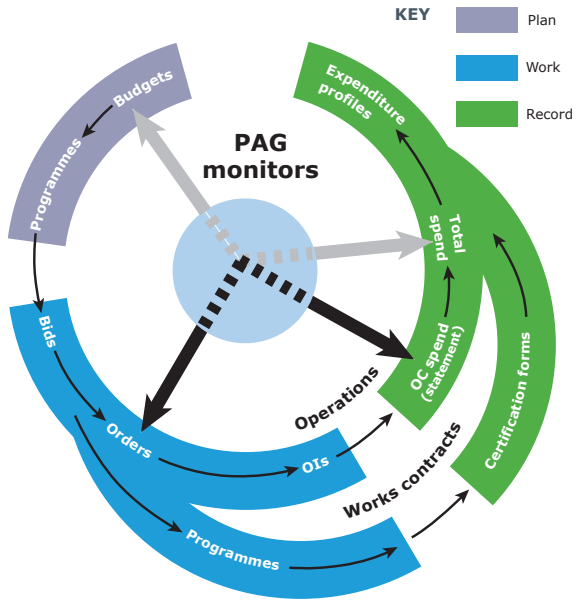

Figure 48: Financial monitoring process

Value for Money and Innovation

Budgetary Control

Budgetary control by the OCs is an important management responsibility. It is important that the OCs exercise good budgetary control regardless of funding levels, as there may be little scope to revise programmes if there are any significant increases in scheme costs, particularly towards year end. This risk has been recognised by Transport Scotland and is included within the PAG audit and monitoring programme.

The OCs have responsibility for delivering a programme of maintenance covering five budget categories, these are routine maintenance (RM), structural maintenance (SM), structures (STR), minor improvements (MI) and strategic road safety (SRS).

A comparison of spend against budget for 2019/20 is shown in Figure 49.

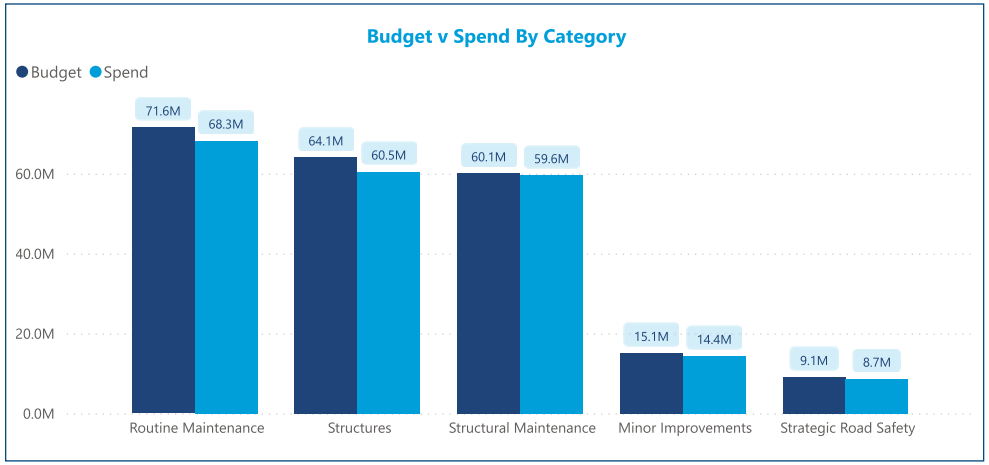

Figure 49: Spend v Budget (excluding CPF) all Units

Spend (excluding CPF) overall was less than budget by £8.4m and primarily related to RM and STR with under spends of £3.3m (5%) and £3.5 (6%). All Units contributed to the under spend. Comments on individual Unit performance is noted below.

NW unit

Net spend of £58.1m was £1.9m (3%) less than budget. Progress against programme was noted as slow throughout the period. Figure 10 shows how the OC managed its budget at budget category level. Areas where budget was not spent under routine maintenance include patching (£450k) and general expenditure (£175k). Structures was under spent against protective coatings to steel Structures (£286k).

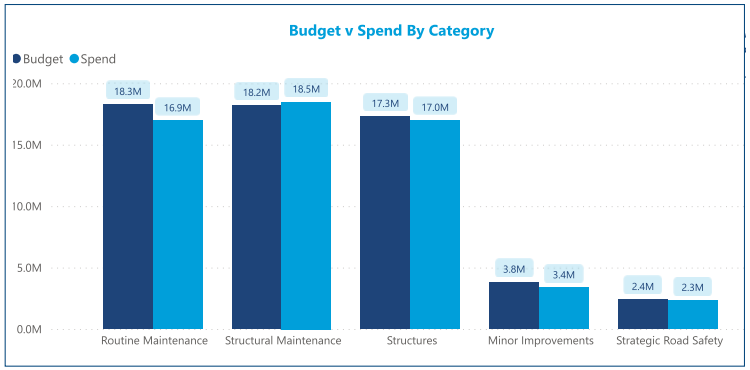

Figure 50: NW Budget v Spend (excluding CPF)

Value for Money and Innovation

SW unit

Net spend of £63.7m £0.8m (1%) less than budget. Progress against programme was noted as slow throughout the period. Figure 11 shows how the OC managed its budget at budget category level. Areas where budget was not spent under routine maintenance include landscaping (£162k) and routine services (£225k). Structures was under spent against bridges and culverts >2m (£110k), major bridges (£338k) and principal and general inspections (£107k).

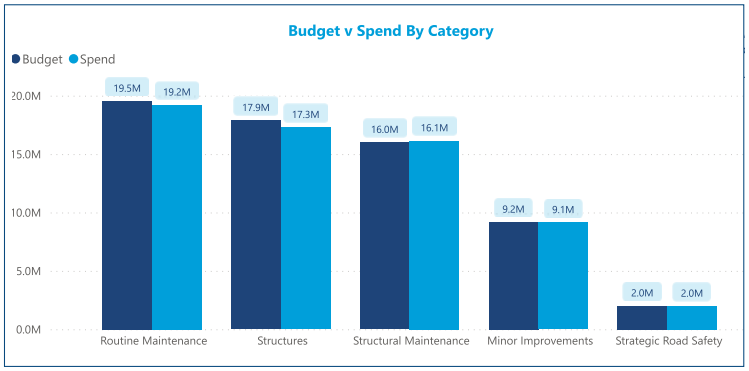

Figure 51: SW Budget v Spend (excluding CPF)

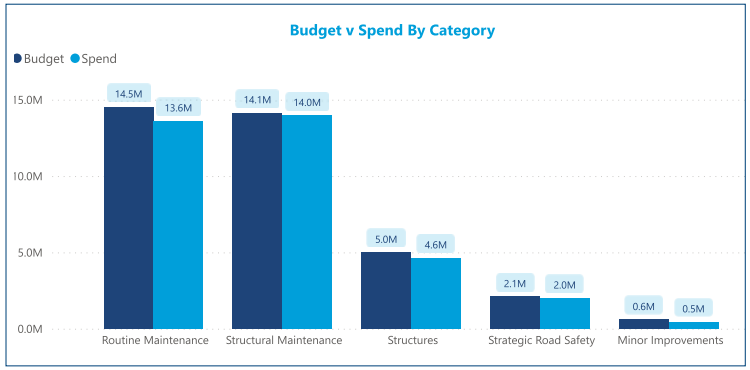

Figure 52: NE Budget v Spend (excluding CPF)

NE unit

Net spend of £34.7m was £1.7m (5%) less than budget. Progress against programme was noted as slow throughout the period.

Figure 12 shows how the OC managed its budget at budget category level. Areas where budget was not spent under routine maintenance include drainage (£153k), road markings (£249k) and patching (£355k). Structural maintenance was under spent against surface dressing (£138k). Structures was under spent against bridges and culverts >2m (£387k).

SE unit

Net spend of £32.6m was £2.2m (6%) less than budget. Progress against programme was noted as slow throughout the period. Figure 13 shows how the OC managed its budget at budget category level. Areas where budget was not spent under routine maintenance include road markings (£108k) and general expenditure (£496k). Structural maintenance was under spent against reconstruction (£277k) and resurfacing (£368k). Structures was under spent against bridges and culverts >2m (£468k). Strategic road safety scheme (£239k).

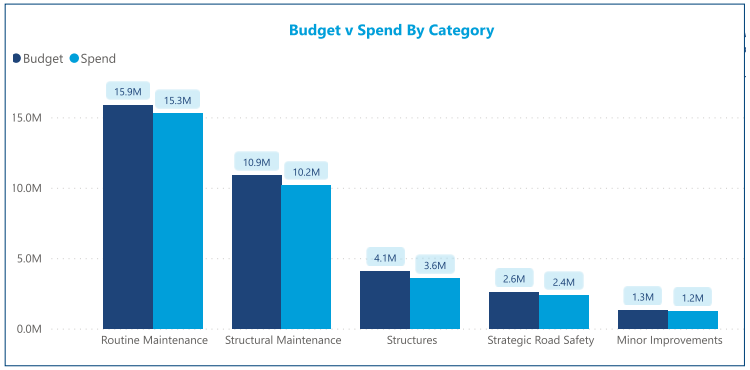

Figure 53: SE Budget v Spend (excluding CPF)

Value for Money and Innovation

FB unit

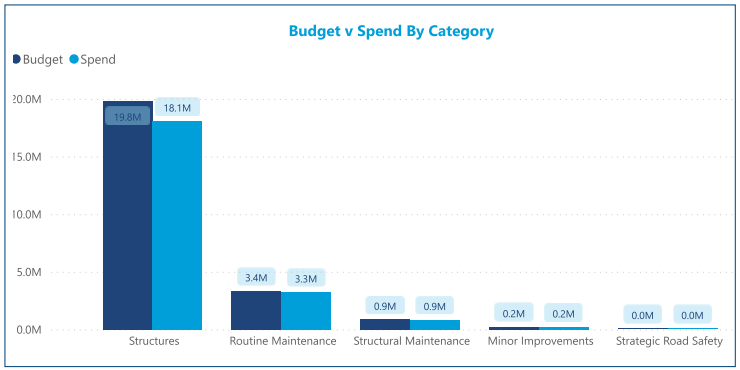

Figure 54: FB Budget v Spend (excluding CPF)

Net spend of £222.4m was £1.9m (8%) less than budget. Progress against programme was noted as slow particularly during the second half of the period. Figure 14 shows how the OC managed its budget at budget category level. Structures was under spent against major bridges (£1.6m).

All units

Figure 55 reflects OC performance in spending its budget throughout the period, with comments on individual Unit performance noted above. PAG will continue to monitor this aspect of contract budgetary control.

Category	FB	NE	NW	SE	SW
Budget v Spend					

Figure 55: Budget, Spend and Programmes Rating

PI 12 (14 FB), see Figure 56, measures the monthly accuracy of spend vs profile.

PI	FB	NE	NW	SE	SW
PI 12 and PI 14 (FB) - Actual spend against profile	94.2%	78.6%	88.3%	91.0%	85.9%

Figure 56: Spend v Profile Performance Indicator

Financial Management of Schemes

PAG monitors various aspects of OC performance in financial management of schemes with ratings given throughout the year. Figure 57 gives the average rating in each of these areas with further description given below.

Category	FB	NE	NW	SE	SW
Bids					
DCP					
Expenditure Profiling					
Order v spend					
Part B and C items					
Scheme Completion					
Statements					
Works Contract Invoices					

Figure 57

Value for Money and Innovation

Bids

Overall performance in NW and SW was Good where generally schemes were completed for at least one month before revised bids were submitted adjusting for over or under spends. Performance in NE and FB was Fair, with schemes completed for at least two months with no revised bids submitted adjusting for over or under spends. Performance in SE unit was Poor where generally schemes were completed for at least three months before revised bids were submitted adjusting for over or under spends. An NNC was issued in NE for not having bids in place for the next quarter in advance.

Order v Spend

Performance in closing out schemes varied within the units. Performance was Good in NW with spend occasionally exceeded orders. SW and FB performance was Fair with spend exceeding orders on a regular basis. Performance was Poor in NE and SE unit where spend frequently exceeded orders.

Scheme Completion

Performance in NE unit was Good with the OC closing out a significant number of schemes after scheme construction. NW, SE, SW and FB units had a Fair performance with a moderate number of schemes still open during the period after completing construction.

Expenditure Profiling

Performance was Good across all units. Profiles were submitted within timescales. Issues encountered included profiles not matching budgets, scheme costs being split equally over multiple periods and use of bucket code schemes.

Statements

Performance was Good in NW and FB units. All statements were submitted within required timescales although some supporting information was not available in CCMf at time of statement submission. Performance was Fair in SW, NE and SE. All statements were submitted within required timescales although a moderate number of supporting information was not available in CCMf at time of statement submission. There were no issues with submission of works contractor invoices.

Part B and C items

PAG undertakes a review of the OCs applications for payment with any issues highlighted for discussion via PAG Statement Review Notes process. Should there be any parts of the statement for which payment is disputed these are recorded in separate parts of the statement (Parts B & C). In FB unit performance was Excellent whilst in NW and NE it was Good in responding to issues reported in PAG's Statement Review Notes within a reasonable timescale. SW and SE units were slow in closing out historical issues with some remaining open for more than two years, it has been actively working to provide evidenced to close out long-standing issues.

Value for Money and Innovation

OC Financial Management of IRIS

As part of the financial management of schemes and budget OCs are required to utilise the Contract Control and Management Function (CCMF) of IRIS.

DCP

Performance was Good for SE and FB Units with minor level of damage to crown property (DCP) data missing from CCMf. Performance in NE, NW and SW was Poor in fully populating CCMf with all appropriate DCP information.

Statements

Performance was Excellent in NW. Performance was Good for NE with minor level of statement data missing from CCMf. For SE, SW and FB performance was Fair with moderate level of statement data missing in CCMf.

Category	FB	NE	NW	SE	SW
DCP					
Statements					

Figure 58

There are also several further Performance and Monitoring Indicators measuring various aspects of performance (Figure 59 & Figure 60).

PI	FB	NE	NW	SE	SW
PI 13 & PI 15 (FB) - Works Contracts cost estimates					99.0%
PI 14 & PI 16 (FB) - Works Contracts out turn cost	100.0%				

Figure 59

MI	FB	NE	NW	SE	SW
MI 04 - Orders against Budget	75%	73%	77%	71%	74%
MI 05 - Works Contractor Invoice submission	100%	100%	100%	63%	100%
MI 06 - Accuracy of Operations cost estimates		75%	79%		
MI 07 - Disputed items in the Statement	-0%	0%	0%	4%	1%
MI 08 - Operations Instructions completed on target	76%	64%	81%	77%	80%

Figure 60

Value for Money and Innovation

Measurement and Valuation

In assessing performance in measurement and valuation PAG undertakes sample reviews of Operating Instructions raised by Operating Companies, both at bid stage and on completion of the operations. These reviews look at the schedule of rate items used by Operating Companies to measure the cost of operations by checking appropriate items and rates have been charged (Method of Measurement). These reviews also look at the files saved to scheme folders to ensure all required records are in place.

Method of Measurement

PAG rated measurement to a Good standard in all units with the exception on FB which was Fair. Although PAG monitoring noted recurring issues relating to; items either being overclaimed, no justification provided, incorrect application of time band adjustments, incorrect application of supplementary services, or items not measured in accordance with the preambles. For records the most common issues found were missing delivery tickets, grip test results, laying records, measurement records, waste transfer notes and maintenance scheme detail. NNCs were issued in NW, NE and SE for lack of supporting measurement records in CCMf.

Quality of Measurement	FB	NE	NW	SE	SW
Measurement					

Figure 61

Quality Management System

To review performance of the Operating Company's Quality Management System PAG undertakes various audits on subjects relating to their systems. PAG also undertakes monthly checks on the integrity by the Operating Company of its internal audit programme and usage of its Non-Conformance Register. Ratings in Figure 62 are averaged over the annual period.

Quality of Quality Management System	FB	NE	NW	SE	SW
Quality Management System Monitoring and Audit					

Figure 62

As an additional measure of the Quality Management system the contractual Performance Indicator 16 (18 in Forth Bridge unit) measures performance in delivery of contractual reports in the timescales required.

PI	FB	NE	NW	SE	SW
PI 16 and PI 18 (FB) - Submission of reports	99.2%	100.0%	100.0%	98.9%	100.0%

Figure 63

Value for Money and Innovation

Non-Conformance and Remedial Notices

The Non-Conformance Notice (NNC) is a mechanism available to PAG where it notes an aspect of delivery that does not meet contractual specification. In this way PAG works with the OCs to highlight and address areas of performance requiring to be addresses via issue of NNCs which in turn places the issue noted into the Operating Company's Quality Management System and onto their internal Non-Conformance Register where, having it highlighted in this way, ensures a resolution is reached to correct the issue and to put in place mechanisms to ensure it is not repeated.

Figure 64 gives the average figure of the contractual Performance Indicator for closure of both PAG raised NNCs and OC raised internal Non-Conformances within set timescales.

PI	FB	NE	NW	SE	SW
PI 15 and PI 17 (FB) - Closure of Non-Conformances	91.7%	96.2%	96.2%	93.8%	100.0%

Figure 64

Figure 65 shows the total number of NNCs and Remedial Notices raised in the 2019/20 annual period, whilst Figure 66 show the total number raised from the start of each contract.

Category	FB	NE	NW	SE	SW
Notice of Non-Conformance	1	2	2	3	0
Remedial Notices	0	0	0	1	1

Figure 65

Category	FB	NE	NW	SE	SW
Notice of Non-Conformance	5	12	21	18	33
Remedial Notices	1	6	9	7	20

Figure 66

In addition to those raised during the 2019/20 annual period, Figure 67 shows NNCs and RNs opened in previous annual periods which remained open in the 2019/20 annual reporting period.

Category	FB	NE	NW	SE	SW
Notice of Non-Conformance	3	2	1	4	1
Remedial Notice	1	2	4	3	8

Figure 67

Employee Engagement

Employee engagement is monitored via a variety of measures which give insight into staff circumstances, (Figure 68 & Figure 69). Each of these PIs provide a figure on a rolling 12 monthly basis.

- *MI 09 provides the percentage of staff turnover*
- *MI 10 the average number of days lost to sickness per person*
- *MI 11 is the average weekly hours worked per person*
- *MI 12 provides the average number of training hours provided per person*

Value for Money and Innovation

MI	FB	NE	NW	SE	SW
MI 09 - Staff turnover	4%	16%	17%	14%	10%

Figure 68

MI	FB	NE	NW	SE	SW
MI 10 - Sickness absence	2	5	5	2	5
MI 11 - Working hours	37	46	44	42	43
MI 12 - Training	27	52	45	10	34

Figure 69

Innovation and Collaboration

Operating Companies are encouraged to provide tangible benefits via introducing innovation to the way the contracts are delivered, or via collaboration with local authorities to provide savings to operations. These two areas are measured via Monitoring Indicators 15 and 16 which is a direct summation of monthly values realised (Figure 70).

MI	FB	NE	NW	SE	SW
MI 15 - Innovation	£0.00	£0.00	£0.00	£0.00	£612,774.00
MI 16 - Collaboration	£0.00	£0.00	£0.00	£0.00	£306,951.00

Figure 70

Sustainability

> To reduce carbon and waste and enhance environments

Environmental Management System

Environmental management is a key aspect of contract delivery. To keep awareness of carbon footprint and the general impact on the environment of operations undertaken in delivering network operations and maintenance services. Operating Companies are required to operate systems in line with the requirements of ISO 14001 and to maintain accreditation to that standard. PAG supplements this accreditation by undertaking audits on the operation of its Environmental Management System, alongside checks whilst on roadworks sites of the environmental performance of site-specific measures identified.

Quality of Environmental & Sustainability	FB	NE	NW	SE	SW
Environmental and Sustainability Monitoring and Audit					

Figure 71

Figure 71 provides the average rating over the annual period of the various reviews undertaken by PAG. Audits of the Environmental Management System found Good performance in NW and NE units, with FB Fair and SE Poor due to several non-conformances and risks identified in the company's management of environmental risk. However, this was balanced out by a generally good performance found on site.

There are also a number of Performance and Monitoring Indicators in the contract which measure differing aspects of performance in this area. Whilst included in the contact the Carbon Management System required to provide figures for PI 19 (Figure 72) is not fully operational so the PI remans suspended. PI 20, maintenance of grassed areas, although principally an element of cyclic maintenance is included in this section of the Asset Management Strategy objectives. Note this PI was only introduced in tranche 2 of the 4th Generation contracts so is not included in the NW or SW contracts.

PI	FB	NE	NW	SE	SW
PI 19 & PI 21 (FB) - Carbon emissions					
PI 20 & PI 22 (FB) - Grassed area	100.0%	100.0%		99.8%	

Figure 72

Figure 73 provides the average values of the annual period measuring rates of recycling of roadworks arisings (MI 18), and of use of reused, recycled or renewable materials in new construction (MI 17).

MI	FB	NE	NW	SE	SW
MI 17 - Sustainability – use of reused, recycled, renewable materials	9%	0%	0%	8%	10%
MI 18 - Sustainability – waste generation and management	95%	100%	100%	100%	98%

Figure 73

Sustainability

Case Study

BEAR NW

Upgrades to the coastal defence systems, worth a total investment of £1M, were undertaken adjacent to the A87 Trunk Road at Kintail between January and July 2020.

This project involved the replacement of the existing defences, which had suffered from coastal washout resulting in areas of collapse along the ageing revetment in this location.

The new defences system consisted of a new modular block retaining wall which supported and protected the footway and carriageway above and allowed the installation of a wider footway and road restraint systems. Approximately 1000 blocks, each weighing 1.25t were installed as part of the new defences.

The new wall was then faced with a new armour stone revetment which is designed to dissipate the energy of approaching waves thereby increasing the design life of the new system. Almost 2000t of armour stone was utilised in this revetment which was all sourced from local quarries.

This project provides increased resilience to the trunk road from coastal erosion at this location whilst also improving pedestrian and cycle travel through the installation of a wider footway.

Performance and Quality Indicators

The following tables provide a summary comparison of performance in all the differing areas of the contract in either PAGs Quality assessment of delivery or the contractual Performance Indicators. The 2018/19 ratings are also provided for comparison.

Quality Ratings in delivery performance

Quality Ratings	NW		SW		NE		SE		FB	
	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20
Safety Inspections										
Winter Service										
Incident Response										
Health & Safety and CDM										
Detailed Inspections										
Network Cyclic Maintenance										
Network Maintenance Schemes										
Principal and General Inspections										
JTRC & Traffic Management										
DRMP										
Structures Cyclic Maintenance										
Structures Risk Programmes										
Structures Maintenance Schemes										
Structures Investigations										
Customer Care and Travel Information										
Barriers to Accessibility										
Measurement										
Quality Management System										
Environmental and Sustainability										
Works Contracts										

Quality Ratings in financial performance

Financial Management of Schemes	NW		SW		NE		SE		FB	
	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20
Bids										
DCP										
Expenditure Profiling										
Order v Spend										
Part B and C items										
Scheme Completion										
Statements										
Works Contract Invoices										

Financial Management of Programmes	NW		SW		NE		SE		FB	
	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20
Budget v Spend										

OC Management of IRIS	NW		SW		NE		SE		FB	
	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20
DCP										
Statements										

Performance and Quality Indicators

Contractual Performance Indicators

Performance Indicators	NW		SW		NE		SE		FB	
	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20
PI 01 RIDDOR	0.15	0.2	0.16	0.4	0.8	0	0.02	0	0	0
PI 02 Accident Frequency Rate	1.58	1.3	2.41	2.8	1.48	1.1	1.28	0.9	7.56	2.3
PI 03 & PI 03a (FB) - Repair of Category 1 Defects	95.0%	93.4%	94.0%	88.0%	92.0%	93.5%	94.0%	93.5%	98.0%	97.6%
PI 03b - Repair of Category 1 Defects - Forth Road Bridge									100.0%	100.0%
PI 04 - Incident Response	98.0%	97.8%	92.0%	93.3%	95.0%	92.3%	98.0%	96.9%	97.0%	99.3%
PI 05 - Safety Inspections and Patrols	97.0%	96.4%	96.0%	97.0%	98.0%	98.2%	100.0%	99.8%	100.0%	99.4%
PI 06 - Detailed Inspections	66.0%	88.7%	80.0%	81.3%	83.0%	89.0%	82.0%	85.8%		
PI 07 - Maintenance	82.0%	91.3%	92.0%	94.0%	75.0%	88.8%	91.0%	86.1%		
PI 08 - Structures Principal Inspections	100.0%	98.0%	100.0%	100.0%	100.0%	95.2%	100.0%	100.0%	98.0%	75.0%
PI 09 - Structures General Inspections	99.0%	99.4%	100.0%	99.8%	99.0%	98.9%	99.0%	96.3%	100.0%	96.4%
PI 10 - Forth Road Bridge Inspections									100.0%	88.9%
PI 10 & PI 12a (FB) - Structures maintenance	88.0%	84.6%	91.0%	88.7%	93.0%	96.5%	94.0%	94.1%	100.0%	99.5%
PI 11 - Queensferry Crossing Inspections										
PI 11 & PI 13 (FB) - Winter Service treatments	100.0%	99.6%	98.0%	96.5%	99.0%	99.1%	100.0%	97.3%	100.0%	99.6%
PI 12 & PI 14 (FB) - Actual spend against profile	87.0%	88.3%	92.0%	85.9%	85.0%	78.6%	95.0%	91.0%	99.0%	94.2%
PI 12b - Structure maintenance – Forth Road Bridge									100.0%	100.0%
PI 13 & PI 15 (FB) - Works Contracts cost estimates			89.0%	99.0%			100.0%			
PI 14 & PI 16 (FB) - Works Contracts out turn cost			99.0%				100.0%			100.0%
PI 15 & PI 17 (FB) - Closure of Non-Conformances	97.0%	96.2%	100.0%	100.0%	100.0%	96.2%	86.0%	93.8%	84.0%	91.7%

Performance Indicators	NW		SW		NE		SE		FB	
	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20	2018/19	2019/20
PI 16 & PI 18 (FB) - Submission of reports	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	98.9%	100.0%	99.2%
PI 17 & PI 19 (FB) - Planning applications	99.0%	98.9%	99.0%	98.5%	100.0%	99.3%	98.0%	95.8%	100.0%	100.0%
PI 18 & PI 20 (FB) - Communications response	94.0%	98.9%	100.0%	100.0%	100.0%	99.7%	97.0%	93.5%	100.0%	99.1%
PI 19 & PI 21 (FB) - Carbon emissions										
PI 20 & PI 22 (FB) - Grassed area					99.0%	100.0%	100.0%	99.8%	100.0%	100.0%
PI 21 & PI 23 (FB) - Recording Inventory Condition Rating		34.0%		57.1%	15.0%	33.3%	88.0%	79.1%		
PI 23b - Recording Inventory Condition Rating – Forth Road Bridge										
PI 23c - Recording Inventory Condition Rating – Queensferry Crossing										
PI 24 - Community Engagements and Community Benefits									100.0%	100.0%
PI 25 - Queensferry Crossing Structural Health Monitoring System Reporting										
PI 26 - Queensferry Crossing Supervisory Control And Data Acquisition System Maintenance										
PI 27a - Access Systems inspection - Forth Road Bridge									99.0%	99.6%
PI 27b - Access Systems maintenance and testing – Forth Road Bridge									91.0%	100.0%
PI 28a - Access Systems inspection - Queensferry Crossing										
PI 28b - Access Systems maintenance and testing – Queensferry Crossing										
PI 29 - Programmed Special Inspections – Forth Road Bridge									100.0%	100.0%

Operating Company Unit Information

North West fact file

Managed and maintained by:

BEAR Scotland Ltd.
BEAR House
Inveralmond Road
Inveralmond Industrial Estate
Perth
PH1 3TW

Total route length of the network in NW:
1,422km

Number of structures:
1,502

Budget for maintaining trunk roads in NW this period:
£60.0m

Operating Company Unit Information

South West fact file

Managed and maintained by:

Scotland TranServ
Oatlands House
150 Polmadie Road
Glasgow
G5 0HD

Total route length of the network in SW:
619km

Number of structures:
1,545

Budget for maintaining trunk roads in SW this period:
£64.6m

Operating Company Unit Information

North East fact file

Managed and maintained by:

BEAR Scotland Ltd.
BEAR House
Inveralmond Road
Inveralmond Industrial Estate
Perth
PH1 3TW

Total route length of the network in NE:
572km

Number of structures:
469

Budget for maintaining trunk roads in NE this period:
£36.4m

Operating Company Unit Information

South East fact file

Managed and maintained by:

Amey Plc.
6A Dryden Road
Bilston Glen
Loanhead
EH20 9TY

Total route length of the network in SE:
473km

Number of structures:
631

Budget for maintaining trunk roads in SE this period:
£34.8m

Operating Company Unit Information

Forth Bridges fact file

Managed and maintained by:

Amey Plc.
Forth Road Bridge
Administration Office
Ferrymuir Gait
South Queensferry
EH30 9SF

Total route length of the network in FB:
33km

Number of structures:
126

Budget for maintaining trunk roads in FB this period:
£24.3m

Glossary of main terms

4G contracts

Fourth generation contracts which were tendered in two phases. NW and SW were tendered first and commenced on 1 April 2013. NE and SE commenced on 16 August 2014. FB was subsequently introduced on 1 June 2015.

Category 1 defect

A Defect that necessitates prompt attention because it presents:

(i) an immediate or imminent hazard, or

(ii) a risk of rapid structural deterioration to the affected element.

Category 2 Defect

Any Defect which is not a Category 1 Defect.

CCMf (Contract control and management function)

A part of IRIS - computer-based financial management system supplied by Transport Scotland and operated by the Operating Companies. The system gives everyone working on the OC contracts, including Transport Scotland and PAG, relevant access to information about how operations and works contracts are being managed financially and where money is being spent.

Contract price fluctuation factor (CPF)

Inflation adjustments to the OC's tendered rates and prices.

Financial year

The period between 1 April 2019 and 31 March 2020.

IRIS (Integrated road information system)

The road information system provided by Transport Scotland and used by the OCs in 4G, which includes the functionality of CCMf, RMMf, SMS and data on the physical characteristics, condition of the trunk road network and accidents.

Performance indicators

A numerical measure of the Operating Company's compliance with a requirement of this Contract.

Monitoring indicators

A numerical measure of service provision as stated in the Contract.

Non-conformance (NC)

Default by the Operating Company or defect in operations.

Notice of non-conformance (NNC)

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

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

RMMf (Routine maintenance management function)

A part of IRIS - 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.

SMS (Structures management system)

A part of IRIS - computer based management system containing an inventory of information on all trunk road structures.

Sustainability

Sustainability in trunk road maintenance and improvement allows for an enhanced network consistent with social needs, permitting environmental stewardship, improving safety, promoting efficiency and meeting the mobility requirements of current and future generations.

Works Contract

Any works undertaken under a separate contract, designed, procured and supervised by Operating Companies. Such contracts are between the Scottish Ministers and a works contractor for execution of a scheme or part of a scheme.

Abbreviations

4G	Fourth Generation Term Contract for the Management and Maintenance of the Scottish Trunk Road Network
BICS	Bridge inspector certification scheme
CCMF	Contract control and management function
CDM	The Construction (Design and Management) Regulations 2015
CPF	Contract price fluctuation
DRMP	Disruption Risk Management Plan
FB	Forth Bridges
FCBC	Forth Crossing Bridge Constructors
H&S	Health and safety
IRIS	Integrated road information system
ISO	International Standards Organisation
LED	Light emitting diode
MI	Monitoring indicators
NNC	Notice of non-conformance
OC	Operating Company
ORI	Observation resulting from inspection
PAG	Performance audit group
PI	Performance indicators
QMS	Quality management system
RMMF	Routine maintenance management function
SM	Structural maintenance
SMS	Structures management system
SRS	Strategic road safety
STR	Structures
VRS	Vehicle restraint system

PAG Team

TRANSPORT SCOTLAND
CÒMHDHAIL ALBA

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BEAR SCOTLAND

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