

SCOTTISH MINISTERS' REQUIREMENTS**SCHEDULE 3 PART 7****NETWORK OPERATIONS SERVICES**

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SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

1. INTRODUCTION

1.1 General

- 1.1.1 Network Operations is a branch of Transport Scotland which is responsible for the provision of a number of traffic, travel information and on-road customer support services all of which are aimed at improving the operational efficiency and journey time reliability of the Trunk Road network. These services are managed by Network Operations and delivered on behalf of the Director by the Traffic Scotland Operations and Infrastructure Services Contractor and Traffic Scotland Systems Contractor as referred to in Annex 3.7/A of this Part and others, they are referred to within this Part as Network Operations service providers.
- 1.1.2 The Operating Company shall support the Director and the Network Operations service providers in the delivery of such services in the manner set out in this Part.

1.2 The Traffic Scotland Service

- 1.2.1 The Traffic Scotland Service was established by the Scottish Ministers to support the delivery of the Scottish Government's purpose of sustainable economic growth. In this regard the specific objectives of the Traffic Scotland Service are to:
- (i) improve journey time reliability,
 - (ii) reduce disruption caused by Incidents, roadworks and events,
 - (iii) minimise the effects of congestion by the provision of alternative route advice,
 - (iv) allow travellers to make informed decisions concerning route, time and means of transport by the provision of credible and accurate travel information, and
 - (v) improve safety and security for travellers.
- 1.2.2 The management of the Traffic Scotland Service is undertaken by Transport Scotland's Network Operations team who form part of the Transport Scotland's Trunk Roads and Bus Operations Directorate. The Traffic Scotland Service is delivered through the Traffic Scotland Operations and Infrastructure Services Contractor on behalf of Transport Scotland.
- ###### **1.3 The Traffic Scotland Operations and Infrastructure Services Contractor**
- 1.3.1 The Traffic Scotland Operations and Infrastructure Services Contractor delivers the Traffic Scotland Service on behalf of Transport Scotland from the Traffic Scotland National Control Centre. The duties carried out by the Traffic Scotland Operations and Infrastructure Services Contractor include:
- (i) Traffic Scotland frontline operations on a 24 hours a day, seven days a week basis,

- (ii) the maintenance of Traffic Scotland Equipment including cabling and ducting arrangements,
- (iii) the traffic data service,
- (iv) facility management of Traffic Scotland's National Control Centre, and
- (v) the design, installation and commissioning of new Traffic Scotland infrastructure.

1.3.2 The name, address and contact numbers of the Traffic Scotland Operations and Infrastructure Services Contractor are detailed in Annex 3.7/A of this Part or as otherwise notified to the Operating Company in writing by the Director. The Director will notify the Operating Company in writing of any changes made to the identity and or role of the Traffic Scotland Operations and Infrastructure Services Contractor.

1.3.3 No later than 25 Working Days prior to Commencement of Service Date 1, the Director will issue to the Operating Company in electronic format, an up-to-date inventory of all Traffic Scotland Equipment located on the Trunk Road network within the Unit and or near to the Unit.

The Director will issue a revised inventory to the Operating Company on a quarterly basis from Commencement of Service Date 1 and, in addition, the Director will issue a revised inventory no later than 25 Working Days prior to Commencement of Service Date 2.

1.3.4 The Operating Company shall take a proactive approach in liaison and coordination with the Traffic Scotland Operations and Infrastructure Services Contractor regarding planned roadworks and events and conditions on any route at the relevant time, Incidents and events that impact on the journey time reliability of the Trunk Road network.

1.3.5 The Operating Company shall provide access (such being unrestricted except for any Operating Company procedures with which others must comply whilst on the Unit), and, shall accompany, the Traffic Scotland Operations and Infrastructure Services Contractor to any Traffic Scotland Equipment on the Principal Crossings for the purposes of the inspection and maintenance of such Traffic Scotland Equipment.

1.4 The Traffic Scotland Systems Contractor

1.4.1 The Traffic Scotland Systems Contractor provides, on behalf of the Scottish Ministers, support, maintenance, development and equipment supply services for the Traffic Scotland incident management system, web system, national traffic database system, and internet protocol communication system.

The name, address and contact number of the Traffic Scotland Systems Contractor shall be as referred to in Annex 3.7/A of this Part or as otherwise notified to the Operating Company in writing by the Director. The Director will notify the Operating Company in writing of any changes made to the identity and role of the Traffic Scotland Systems Contractor.

2. CONSULTATION, LIAISON, NOTIFICATION AND COORDINATION REQUIREMENTS RELATING TO NETWORK OPERATIONS SERVICES

2.1 General

2.1.1 The Operating Company shall consult, liaise, notify and coordinate with the Director and the Network Operations service providers as detailed in this Part.

2.1.2 Where the Trunk Road network is not operating within its normal operational conditions, including situations where delays exceed the limits defined in Annex 3.7/F of this Part or an Incident has occurred, the Operating Company shall continually share its knowledge with, and report such conditions and the status of Incidents on the Trunk Road network to, the Traffic Scotland Operations and Infrastructure Services Contractor and the Director. The delay and Incident status knowledge transfer shall be delivered in a continual and consistent manner and the Operating Company shall:

- (i) ensure that all its resources both internal and external are aware of the requirement of this knowledge transfer and are able to undertake such communications, and
- (ii) prepare documentation and tool box talks to ensure that delay and Incident status knowledge transfer becomes part of the operational culture of the Operating Company.

2.1.3 The Operating Company shall attend at least one meeting with the Director and each of the Network Operations service providers during Mobilisation Period 1. Thereafter the Operating Company shall meet at least quarterly with the Traffic Scotland Operations and Infrastructure Services Contractor to provide feedback, learning and improvements in support of achieving the Director's key objectives and provide continual improvement in the delivery of duties specified within this Part. The Director may require the Operating Company to attend meetings more frequently than quarterly and the Operating Company shall comply with any such request.

2.2 Appointment of Journey Time Reliability Coordinator

2.2.1 The Operating Company shall appoint a suitably qualified person in accordance with the requirements of Schedule 5 Part 4 to deliver the Journey Time Reliability Coordinator role.

2.3 Journey Time Reliability Coordinator's Main Duties

2.3.1 The Journey Time Reliability Coordinator shall be responsible for supporting the Network Manager and Incident Liaison Officers in the delivery of the coordination, liaison and management requirements of the Operating Company specified within this Part, to ensure that the journey time reliability of the Trunk Road network in or near the Unit is maintained at its optimum level.

2.3.2 The Journey Time Reliability Coordinator shall be proactive in gathering relevant information and continuously monitoring the Automated Diary Facility, the SRWR, the Traffic Scotland Service website and other relevant systems to ensure complete knowledge of all roadworks, events and Incidents occurring on or near the Unit.

2.3.3 The Journey Time Reliability Coordinator shall be the first point of contact within the Operating Company for all roadworks undertaken by the Operating Company and events occurring on or near the Unit within and outwith Normal Working Hours. The Journey Time Reliability Coordinator shall be contactable on dedicated landline and mobile phone numbers.

2.3.4 The Journey Time Reliability Coordinator shall undertake periodic site visits to assess the implementation and impact of roadworks and events. Such visits shall be used to assess how improvements in journey time reliability can be made when similar roadworks and events take place in the future.

2.3.5 The Journey Time Reliability Coordinator shall:

- (i) liaise and communicate with relevant Operational Partners such to include as a minimum:
 - (a) the dissemination of accurate and timely information to assist in the effective delivery and coordination of all roadworks and events throughout the Unit,
 - (b) supporting the Network Manager in ensuring representation by Operating Company personnel at all liaison meetings with the Operational Partners,
 - (c) supporting the Network Manager in ensuring representation by the Operating Company at seminars or working groups related to improving the methods by which Trunk Road management and maintenance activities shall be carried out, when required by the Director including as a minimum attendance at the Forth Replacement Crossing Traffic Management Working Group meetings,
 - (d) ensuring that the minutes of all liaison meetings called by the Operating Company are prepared and copies issued to the Director via the Network Manager and relevant Operational Partners, within five Working Days of the meeting taking place, and
 - (e) ensuring that the issues arising from the liaison meetings are managed in accordance with the requirements of this Contract and that any actions required from the Operating Company are completed within the agreed or required timescales,
- (ii) providing a monthly report to the Director via the Network Manager no later than the fifteenth day of each calendar month until the Service End Date of:
 - (a) liaison meetings held,
 - (b) issues arising from such liaison meetings,
 - (c) actions taken or to be taken arising from such liaison meetings,
 - (d) action plans agreed between the Operating Company and the Director and or Operational Partner, and
 - (e) the impacts of the Operating Company's activities on the journey time reliability of the Trunk Road network with recommendations for proposed improvements,
- (iii) preparing and submitting reports annually to the Director via the Network Manager, detailing the impacts of all the Operating Company's activities on the journey time reliability of the Trunk Road network including as a minimum any proposed improvements and mitigation measures,
- (iv) ownership and management of the Automated Diary Facility ensuring that it is fully functional and kept updated at all times,
- (v) ensuring that all parties requiring the use of the Traffic Scotland Service are provided with a unique roadworks reference from the Automated Diary Facility to quote when contacting the Traffic Scotland Operations and Infrastructure Services Contractor,

- (vi) ensuring the necessary temporary traffic regulation order is in place before requesting the Traffic Scotland Operations and Infrastructure Services Contractor to implement roadworks settings to support the roadworks,
- (vii) when the appropriate functionality becomes available in the Automated Diary Facility, entering the temporary traffic regulation order reference,
- (viii) coordinating, monitoring and controlling all roadworks or events to minimise road closures, potential impacts and conflicts and maximising the capacity of the Trunk Road network, using the Automated Diary Facility and SRWR as appropriate,
- (ix) disseminating accurate and timely information to Operational Partners via the Automated Diary Facility, emails, regular meetings and telephone calls to assist in the effective coordination of their activities,
- (x) implementing escalation procedures for roadworks and events which exceed allowable delay thresholds,
- (xi) liaising with the Incident Liaison Officers and relevant Operational Partners in dealing with Incidents occurring during roadworks including as a minimum coordination of the activation and implementation of Standard Incident Diversion Routes and managing the cancellation of roadworks if such cancellation will improve the capacity of the Trunk Road network when an Incident is taking place,
- (xii) utilising and managing support personnel on specific tasks relating to the planning and implementation of roadworks or events including as a minimum ensuring such personnel are provided with adequate communications equipment, coordinating, mobilising, deploying and supervising traffic management arrangements and evaluating their impacts,
- (xiii) notifying the Director via the Network Manager promptly in writing of operational conflicts that may impact on the journey time reliability of the Trunk Road network and coordinating the implementation of any corrective action consented to by the Director with the Traffic Scotland Operations and Infrastructure Services Contractor,
- (xiv) coordinating the programming, planning and installation of traffic management and traffic control equipment in relation to the roadworks undertaken by the Operating Company to ensure the safety of Operating Company operational staff and Trunk Road users,
- (xv) maintaining a record of all traffic management installations, including as a minimum mobile lane closures on the Unit for each day of each Annual Period on a central database maintained by the Operating Company and ensuring that all updates are completed by 09.30 hours on the following Working Day,
- (xvi) management and dissemination of information required by the Operating Company and others for the preparation of Temporary Traffic Regulation Orders for roadworks and Special Events in accordance with the Specification, and
- (xvii) liaise with relevant Operational Partners to ensure the Operating Company's procedures and working practices when carrying out Operations on the Unit are fully compatible with the Traffic Scotland Operations and

Infrastructure Services Contractor's operational procedures for the public transport corridor.

2.4 Specialist Contractors Appointed by Network Operations

- 2.4.1 The Director has appointed a number of Network Operations service providers to undertake routine maintenance and emergency repair of Network Operations equipment and to undertake the design and construction of new Network Operations equipment. The Operating Company shall liaise and coordinate regularly with all Network Operations service providers to minimise the impact of Operations or work on the Network Operations equipment and journey time reliability of the Trunk Road network. The Operating Company shall facilitate Network Operations service providers' access to its planned maintenance schedules so that Network Operations service providers can plan work to coordinate with planned Operating Company maintenance activities.

2.5 Proposed Operations or Works Contract or Works in the vicinity of Network Operations Equipment

2.5.1 When:

- (i) the Operating Company proposes to carry out Operations or a Works Contract within or adjacent to locations containing Network Operations equipment, or
- (ii) the Operating Company becomes aware of authorised contractors, Undertakers or others proposing to carry out work within or adjacent to locations containing Network Operation equipment,

the Operating Company shall communicate with the Director and the appropriate Network Operations service providers as if the Network Operations service provider was an Undertaker as defined in the *New Roads And Street Works Act 1991*.

2.6 Proposed Operations or Works Contract or Works affecting Network Operations Equipment

2.6.1 When:

- (i) the Operating Company proposes to undertake any Operations or a Works Contract that may have a physical effect on any Network Operations equipment, or
- (ii) the Operating Company becomes aware of authorised contractors, Undertakers or others proposing to carry out work that may have a physical effect on any Network Operations equipment,

the Operating Company shall notify the appropriate Network Operations service provider by completing and submitting the form provided at Annex 3.7/B of this Part via e-mail at least 15 Working Days prior to the Operations, Works Contract or work commencing. The completion and submission of the form shall be in addition to all planning of relocation, design of relocation and consultation with the Director which the Operating Company shall undertake when it commences any planning of Operations, Works Contract or work that will impact on Network Operations equipment, as detailed in paragraph 2.6.4 of this Part.

- 2.6.2 Where the Operating Company deems that such Operations, Works Contracts or work shall have no physical effect on any Network Operations equipment, the form shall be submitted to show a nil return.

- 2.6.3 Where Operations or Works Contracts undertaken by the Operating Company involve the submission of a Statement of Intent and a Value for Money Assessment, these shall include reference to any work required at the Network Operations equipment site.

Where a Statement of Intent and Value for Money Assessment identifies that Network Operations equipment may be affected, a copy of the Statement of Intent and Value for Money Assessment shall be issued simultaneously to the appropriate Network Operations service provider and the Director.

- 2.6.4 The Operating Company shall consult and liaise with the Director and the appropriate Network Operations service provider regarding the nature of the Operations or Works Contract and, subject to paragraph 2.6.5 of this Part, shall make arrangements for the affected Network Operations equipment to be relocated, replaced or renewed. Such arrangements shall include as a minimum detailed planning and design of works to accommodate the diversion and relocation of Network Operations equipment.

- 2.6.5 The Operating Company shall only undertake the planning, design, diversion, relocation and renewal of the Network Operations equipment where it demonstrates to the satisfaction of the Director that it has the skills and competence to undertake such work and the Director has consented in writing to the Operating Company undertaking such work. Where such consent has been received the Operating Company shall undertake and complete this work as an integral part of the Operations or Works Contract and shall:

- (i) complete the planning and design of the diversion, relocation or renewal of Network Operations equipment as part of the planning and design of the Operations or Works Contract in consultation with the Director and the relevant Network Operations service provider,
- (ii) complete any diversion and relocation of Network Operations equipment in advance of, or during, the Operations or Works Contract as appropriate,
- (iii) when the Operations include road surfacing, ensure that Network Operations surface detection equipment is replaced and operational as part of the Operations or Works Contract or, if consented to in writing by the Director, within seven Working Days of the surface course being laid, and
- (iv) undertake all relevant and statutory testing of Network Operations equipment and the provision of records to enable the Director and the Network Operations service providers to maintain the relevant Health and Safety File and *New Roads and Street Works Act 1991* records.

Testing shall take place as an integral part of the Operations or Works Contract and the Records shall be provided within 10 Working Days of the completion of Operations or Works Contract adjacent to the Network Operations equipment. If the Operating Company fails to provide the necessary Records within 25 Working Days of such completion, the Director will arrange for the relevant Network Operations service provider to undertake any tests and investigations necessary to prepare and provide all such Records. Any additional costs incurred by either the Network Operations service provider and or the Director in having to undertake such tests and investigations shall be borne by the Operating Company. Such costs shall be deducted from the next payment or any subsequent payment due to the Operating Company pursuant to the other provisions of this Contract or, at the option of the

Director, shall be recoverable from the Operating Company as a debt due to the Scottish Ministers.

- 2.6.6 The Operating Company shall ensure that any affected Network Operations equipment is replaced as part of the Operations or Works Contract in accordance with specifications that will be supplied by the Director.
- 2.6.7 Where the Director does not consent to the Operating Company undertaking the diversion, relocation or replacement of the Network Operations equipment or any part of the work required, the Operating Company shall liaise with the Director and the relevant Network Operations service provider in the planning of the work to ensure that the completion of such work complies with the timescales agreed as part of the planning of the work and any other timescale as referred to in this Part.
- 2.6.8 When Works that affect or may affect Network Operations equipment are to be undertaken under a Works Contract, the Operating Company shall include within the Works Contract a requirement for:
- (i) the Works Contractor to give notice in accordance with the timescales referred to in this Part, and
 - (ii) the Network Operations equipment to be diverted, relocated or replaced as part of the Works Contract within the previously planned timescales provided that the relevant Works Contractor can demonstrate to the Director that it has the skills and competence to undertake such work and the Director has consented in writing to the relevant Works Contractor undertaking such work.
- 2.6.9 When work that affects or may affect Network Operations equipment is to be undertaken by authorised contractors, Undertakers or others, the Operating Company shall:
- (i) on receiving notice of the work from the authorised contractor, Undertaker or others, notify the Director and the appropriate Network Operations service provider in writing of the proposed work, and
 - (ii) make arrangements with the authorised contractor, Undertaker or others for the Network Operations equipment to be diverted, relocated or replaced as part of the work within the previously planned timescales.

In such circumstances, the Director reserves the right to nominate Network Operations service providers to undertake the diversion, relocation or replacement of the Network Operations equipment.

2.7 Proposed Operations or Works Contract or Work Relating to New Network Operations Equipment

- 2.7.1 Where the Operating Company proposes a location for any new Network Operations equipment which may be required within the Unit, the Operating Company shall complete the form provided at Annex 3.7/C of this Part and submit it via e-mail to the Director who will either consent to the proposed location or suggest revisions to the Operating Company. The Operating Company shall liaise and consult further until the Director consents to the revised location.

Where the Network Operations service provider agrees to the Operating Company undertaking the installation of the new Network Operations equipment, the Operating Company shall undertake this work as part of the Operations in

accordance with the requirements of this Part and the specification provided by the Director. Where the Director does not consent to the Operating Company undertaking this installation work, the Director will arrange for the Network Operations service provider(s) to undertake such work and the Operating Company shall provide any information and support requested by the Director to the Network Operations service provider(s).

2.8 Damage to Network Operations Equipment

2.8.1 The Operating Company shall ensure that it is aware of situations where Network Operations equipment is or may be susceptible to damage from Operations or from Works Contracts and shall ensure that all suitable precautions are taken to prevent damage to such equipment. Such situations shall include as a minimum edge drainage works where the wiring from detector loops to cabinets may be damaged.

2.8.2 Where the Operating Company causes damage, suspects that it, or its subcontractors or a Works Contractor may have caused damage, or becomes aware of any external activities that may have caused damage to Network Operations equipment, it shall immediately inform the appropriate Network Operations service provider by telephone, providing an indication of what damage has occurred. The Operating Company shall subsequently complete the form provided at Annex 3.7/D of this Part and submit it to the Network Operations service provider via e-mail within 24 hours of the damage being caused or identified.

2.8.3 When instructed by the Director, either the Operating Company or Network Operations service provider shall undertake repair of the damage at the earliest possible time.

When such a repair is temporary, the Operating Company shall liaise with the Director and the relevant Network Operations service provider regarding the nature of the damage and make arrangements for the Network Operations equipment to be repaired or replaced by either the Network Operations service provider or the Operating Company.

When such a repair is permanent, the Operating Company shall undertake the permanent repair in accordance with paragraph 2.6 of this Part. The timescales for completion of the permanent repair shall be agreed with the Director but shall usually be within 25 Working Days to 75 Working Days from the date of the initial damage. If the Operating Company fails to complete the permanent repair within the agreed timescales, the Director will arrange for the Network Operations service provider to undertake the repair. All costs associated with such repair shall be borne by the Operating Company. Such costs shall be deducted from the next payment or any subsequent payment due to the Operating Company pursuant to the other provisions of this Contract or, at the option of the Director, shall be recoverable from the Operating Company as a debt due to the Scottish Ministers.

3. SPECIFIC REQUIREMENTS RELATING TO THE TRAFFIC SCOTLAND SERVICE

3.1 The Automated Diary Facility

3.1.1 The Traffic Scotland Operations and Infrastructure Services Contractor requires complete knowledge of:

- (i) all planned and emergency Operations, works, traffic management, closures of Lanes and occupations of Lanes, which for the purposes of this

Part only shall be called 'roadworks', whether such roadworks are undertaken by the Operating Company, Works Contractor, Undertaker, authorised contractor or others, and

- (ii) all Special Events expected to attract a minimum of 3,000 attendees, such including as a minimum, concerts, sporting events and seasonal events which are likely to generate significant traffic.

3.1.2 The Operating Company shall use the Automated Diary Facility for providing information to the Traffic Scotland Operations and Infrastructure Services Contractor when:

- (i) the Operating Company proposes to undertake any Operations or Works Contracts, or
- (ii) the Operating Company becomes aware of authorised contractors, Undertakers or others proposing to carry out any work.

3.1.3 The Operating Company shall be responsible for ensuring that all information held in the Automated Diary Facility is accurate, complete and up to date at all times to enable the Traffic Scotland Operations and Infrastructure Services Contractor to deliver reliable information to customers.

3.1.4 The Operating Company shall monitor both the Automated Diary Facility and SRWR to determine if there are any other roadworks scheduled or in progress by any Works Contractor, Undertaker, authorised contractor or others that may impact on the implementation of any proposed roadworks. Where other roadworks are identified as having such a potential impact, the Operating Company shall coordinate these roadworks to minimise potential impacts or mitigate against conflicts with the proposed implementation programme.

3.2 Access to the Automated Diary Facility

3.2.1 No later than 25 Working Days prior to Commencement of Service Date 1, the Operating Company shall provide and maintain at the Central Office a broadband internet connection for access to the Automated Diary Facility.

3.2.2 Prior to ordering this connection, the Operating Company shall contact the Director to confirm the Director's exact requirements.

3.3 Information to be Logged on the Automated Diary Facility

3.3.1 The Operating Company shall ensure that details of all roadworks undertaken within the Unit are logged onto the Automated Diary Facility and kept updated at all times. Each item logged shall be allocated a unique referencing number which shall be quoted by the Operating Company in all communications with Traffic Scotland Operations and Infrastructure Services Contractor and within its own organisation and by its subcontractors.

3.3.2 The information supplied by the Operating Company via the Automated Diary Facility shall allow Traffic Scotland Operations and Infrastructure Services Contractor to create messages on the Traffic Scotland variable message signs, informing road users of potential delays and of alternative routes where applicable.

3.3.3 The Traffic Scotland Service website shall serve as the single, reliable source for information on all events. The Operating Company shall ensure that the Traffic Scotland Service website is monitored on a daily basis to obtain information on

forthcoming events that need to be incorporated into the planning of Operations or Works Contracts.

3.3.4 The Operating Company shall ensure that details of Special Events expected to attract fewer than 3,000 attendees, but deemed by the Operating Company to have potential to cause significant delays, are logged on the Automated Diary Facility and kept updated at all times. The Operating Company shall use the Network Access Form at Annex 3.7/E of this Part to request roadworks information from Works Contractors, authorised contractors, Undertakers and others with a right to work within the Unit, to ensure accurate and consistent information is utilised to meet the obligations of this Part. This information shall then be logged on the roadworks diary of the Automated Diary Facility for each roadworks event.

3.3.5 The Operating Company shall ensure all details logged into the Automated Diary Facility are reviewed and updated no later than 09.30 hours daily. Where the Operating Company becomes aware of any significant change to such details, it shall ensure the Automated Diary Facility is updated within one hour of becoming aware.

3.4 Access to Closed Circuit Television Cameras

3.4.1 The Director will make arrangements to provide access to closed circuit television cameras to the Operating Company at the locations agreed between the Director and the Operating Company.

3.5 Assessment of Roadworks Delays

3.5.1 Roadworks or any other activity being undertaken by the Operating Company, FCBC or authorised contractors, Undertakers or others, which reduce the operational capacity of the Trunk Road network on or near the Unit shall require an assessment by the Operating Company prior to commencement to assess the impact of the reduction in capacity. To assist the Operating Company in carrying out assessments the Director will provide the delay modelling tool described in Annex 3.7/G of this Part. Where the Operating Company or the Director are of the opinion that a particular scenario cannot be accurately assessed by the delay modelling tool then the Operating Company shall carry out a more detailed analysis. The Director's consent will be required to the method and more detailed analysis to be used.

3.5.2 The Operating Company shall undertake reduction in capacity assessments for the full duration of any activity that reduces the operational capacity of the Trunk Road network on or near the Unit and each assessment shall include the unique reference number as described in paragraph 3.3.1 of this Part.

3.5.3 The Operating Company shall not assess roadworks relating to emergency repairs prior to commencement but shall assess such roadworks on the next Working Day after implementation.

3.5.4 Where activities that reduce the operational capacity of the Trunk Road network on or near the Unit are proposed that have been assessed as likely to cause traffic delays below the acceptable delay thresholds detailed in Annex 3.7/F of this Part, Operating Company shall implement such activities following the normal notification period.

3.5.5 The Operating Company shall record each delay assessment in the Automated Diary Facility.

3.5.6 Where activities that reduce operational capacity are proposed which have been assessed as likely to cause traffic delays greater than the acceptable delay threshold of 12 minutes as detailed in Annex 3.7/F of this Part, the Operating Company shall implement such activities only following receipt of consent from the Director. To allow the Director to determine if consent can be given, the Operating Company shall prepare a delay management report detailing justification for implementing activities that will cause delay greater than the acceptable delay threshold of 12 minutes. The delay management report shall include as a minimum:

- (i) activity location and description,
- (ii) result of initial impact assessment,
- (iii) data collection and modelling approach where modelling beyond the use of the delay modelling tool has been consented to by the Director, and
- (iv) description of existing and expected operational condition of that part of the Trunk Road network on or near the Unit affected by the proposed activity, with a summary of recommendations for measures to be applied to reduce delay.

3.5.7 The Operating Company shall notify the Traffic Scotland Operations and Infrastructure Services Contractor at least 25 Working Days prior to the commencement of the activity when the estimated delay is greater than eight minutes.

3.5.8 Complex roadworks refer to situations where specific work activities and time periods may make it impossible to meet the delay thresholds detailed in Annex 3.7/F of this Part. Conditions where this may occur include as a minimum:

- (i) roadworks located in areas where the existing Trunk Road is operating at or near capacity but where the existing traffic flow is relatively stable. At such locations, a slight reduction in capacity resulting from roadworks activities could have a significant impact on road users,
- (ii) roadworks where closures of Lanes are required to preserve the safety of road users and Operating Company personnel or for environmental reasons, and
- (iii) roadworks being undertaken during periods of high traffic volume related to seasonal traffic, holidays and events.

For activities that may cause delay beyond the 12 minute delay threshold detailed in Annex 3.7/F of this Part the Operating Company may propose the use of microscopic simulation models for the Director's consent.

3.5.9 When the Operating Company identifies an implementation option that reduces predicted delays below the 12 minute delay thresholds detailed in Annex 3.7/F of this Part, this implementation option shall be used by the Operating Company.

3.6 Notification of Roadworks Delays

3.6.1 Where roadworks are being undertaken which have been assessed as likely to cause traffic delays in excess of thresholds detailed in Annex 3.7/F of this Part, or which involve the closure of an off-slip or on-slip road, the Operating Company shall keep the Traffic Scotland Operations and Infrastructure Services Contractor notified of traffic delays via regular telephone calls, quoting the unique Automated Diary Facility reference number for the Site, at the following intervals:

- (i) at code 3 and 4 delays, 15 minutes prior to traffic management commencing at a roadworks location,
- (ii) immediately when delays to traffic, assessed using the delay modelling tool, exceed 10 minutes,
- (iii) thereafter at no more than 30 minutes intervals or when delay changes of five minutes or more occur, giving details of the delay times until they have ceased to exceed 10 minutes, and
- (iv) immediately once the traffic management has been removed from a roadworks location.

3.6.2 The Operating Company shall notify the Traffic Scotland Operations and Infrastructure Services Contractor by telephone and update the Automated Diary Facility within one hour of becoming aware of changed circumstances which would significantly affect movement of traffic, including as a minimum:

- (i) when roadworks which were coded 1 to 2 in accordance with 'Coding for estimated traffic delays' detailed in Annex 3.7/F of this Part are causing traffic delays in excess of 10 minutes,
- (ii) when planned roadworks are cancelled at short notice and the cancellation has not yet been entered into the Automated Diary Facility,
- (iii) Incidents that have been notified to, or identified by, the Operating Company, and
- (iv) when road, closures or Lanes or slip closures or occupations of Lanes have been, or are likely to be, put in place.

3.7 Monitoring and Evaluation

3.7.1 To facilitate learning and feedback from the implementation of roadworks, the Operating Company shall monitor and evaluate predicted and actual delays. If the actual delay exceeds the predicted delay by any period greater than five minutes, the Operating Company shall include within the Automated Diary Facility actual delays for all code 4 works and for all codes of works designated in accordance with the 'Coding for estimated traffic delays' provided in Annex 3.7/F of this Part.

3.7.2 If necessary, the Operating Company shall utilise equipment which can automatically determine traffic delays through roadworks and disseminate appropriate messages to the Traffic Scotland Operations and Infrastructure Services Contractor. Where the Operating Company considers the use of automatic traffic delay monitoring equipment necessary, it shall submit written proposals for the deployment of such equipment to the Director for consent. Where the Operating Company considers the use of automatic traffic delay monitoring equipment is not feasible, it shall instead deploy sufficient operational personnel to monitor traffic delays.

3.7.3 Where the actual traffic delays exceed the predicted traffic delays by any period greater than 15 minutes, the Operating Company shall immediately notify the Traffic Scotland Operations and Infrastructure Services Contractor and the Director. The Operating Company Network Manager shall provide details of the discrepancy between the predicted and actual delays and propose suitable on site corrective actions and shall keep the Director and Traffic Scotland Operations and Infrastructure Services Contractor briefed on the status of such roadworks.

- 3.7.4 The Director may require the Operating Company to implement proposed corrective actions or suspend the implementation of roadworks in order to reduce traffic delays which he considers unacceptable. Where the suspension of roadworks due to unacceptable travel delays would have a negative impact on the safety of road users, the Director may allow the implementation of roadworks to continue until the Operating Company has resolved the negative impact by taking the necessary corrective actions. The Operating Company shall notify and liaise with the Traffic Scotland Operations and Infrastructure Services Contractor in either situation.

3.8 Vehicle Activated Signs

- 3.8.1 The Operating Company shall provide and use vehicle activated signs during roadworks where such use will address safety issues relating to inappropriate speeds subject to obtaining the Director's consent to the usage of such. The Operating Company requests for consent to the use of vehicle activated signs shall be made in writing to the Director.
- 3.8.2 Vehicle activated signs shall only be deployed in addition to regulatory signs as a response to excessive speed and in accordance with the following requirements:
- (i) the *Traffic Signs Regulations and General Directions 2002* and other relevant United Kingdom and European Union guidance and standards. Departures shall not be permitted unless specifically consented to by the Director,
 - (ii) be of a type consented to by the Director for use on the Trunk Road network, and shall utilise only the legends consented to by the Director,
 - (iii) not be deployed where the works are located within those sections of the Trunk Road network that already have Lane control signalling,
 - (iv) where both directions within the roadworks area meet the criteria of this paragraph, one vehicle activated sign shall be deployed in each direction, and
 - (v) be deployed where detailed accident investigation or risk assessment confirms that vehicle activated signs are an appropriate remedial measure.
- 3.8.3 Speed monitoring detectors shall be installed accurately to minimise errors in speed measurement.
- 3.8.4 When the signs are activated, the displays shall provide appropriate warning to motorists when the assigned speed limit is exceeded and shall not interfere with the visibility and general effectiveness of any other signs in the area.

3.9 Mobile Variable Message Signs

- 3.9.1 Traffic Scotland Equipment includes a network of permanently located variable message signs positioned at key locations throughout the Trunk Road network. These signs facilitate the provision of real time information to Trunk Road users.
- 3.9.2 The Scottish Ministers own a number of mobile variable message signs. These shall be made available for use by the Operating Company in advance of, or during, any major works or Operations in areas which are out with the coverage of the permanent variable message sign system forming part of the Traffic Scotland Equipment.

- 3.9.3 Where the Operating Company requires the use of the mobile variable message signs, the Operating Company shall apply in writing to the Traffic Scotland Operations and Infrastructure Services Contractor for consent to use these, giving as much notice as possible. The Traffic Scotland Operations and Infrastructure Services Contractor shall have absolute discretion to decide when the use of the mobile variable message signs is allowed, based on the perceived benefits to road users.
- 3.9.4 Where the Traffic Scotland Operations and Infrastructure Services Contractor gives written consent to the use of mobile variable message signs, the responsibilities of the Operating Company shall be as specified within the *Use Of Mobile Variable Message Signs On The Trunk Road Network* guidance.
- 3.9.5 In accordance with this guidance, the Transport Scotland mobile variable message signs shall be used by the Operating Company to cover situations including:
- (i) the signing of major roadworks where there are currently no permanent variable message signs,
 - (ii) gauging driver reaction to the potential benefits of permanently locating a variable message sign at that position on the Unit,
 - (iii) providing weather related information during the winter months, such as snowfalls which have the potential to require road closures or seriously affect traffic travelling these routes, and
 - (iv) signing for large scale outdoor events that generate abnormally high levels of traffic in otherwise quiet areas for short periods such as pop concerts and sporting events.
- 3.9.6 The Operating Company shall be responsible for:
- (i) the collection and return of the signs in good working order by arrangement with the Traffic Scotland Operations and Infrastructure Services Contractor, and
 - (ii) the provision of suitable locations for the signs, which shall include as a minimum:
 - (a) hard standing, including adequate maintenance access to the sign once deployed,
 - (b) protection for the signs by an existing permanent barrier or by a temporary barrier, including assessment of the site to ensure compliance with TD19/06 of the *Design Manual for Roads and Bridges* and any other road safety related matters,
 - (c) a 230 volts, 50Hz power supply facility complete with appropriate methods of connecting to the mobile variable message signs, including provision of certification to British Standard 7671, which shall be provided prior to connection of the sign,
 - (d) where it is not possible to provide a mains power supply facility, the Operating Company shall be responsible for the provision of a suitable generator, including the supply of fuel, maintenance, security and all necessary servicing when using signs with a generator, and

- (e) visual inspection of the sign and its immediate environs and reporting of any defects to the appropriate parties during their operation.

3.10 Before-and-After Traffic Counts

- 3.10.1 Certain road improvement Schemes require to be supported by before-and-after traffic counts.

When the Operating Company proposes the location of any new traffic counting site required for undertaking before-and-after studies, the Operating Company shall complete the form provided at Annex 3.7/C of this Part and submit it to the Director and the Traffic Scotland Operations and Infrastructure Services Contractor via e-mail. The Operating Company shall obtain the written consent of the Director before such before-and-after studies are undertaken.

- 3.10.2 Where the Director consents to the Operating Company undertaking the deployment of the proposed new traffic counting equipment, the Operating Company shall undertake this work as an integral part of the Operations or Works Contract in accordance with the requirements of this Part and the specification provided by the Director. Where the Director does not consent to the Operating Company undertaking this installation work, the Director will arrange for the Network Operations service provider(s) to undertake such work and the Operating Company shall provide any information and support requested by the Director to the Network Operations service provider(s).

4. SPECIFIC REQUIREMENTS RELATING TO THE FORTH ROAD BRIDGE

4.1 Intelligent Transport Systems Equipment

- 4.1.1 The Operating Company shall be responsible for the operation, inspection and maintenance of the intelligent transport systems equipment listed in Annex 3.7/H of this Part from Commencement of Service Date 1. The Operating Company shall carry out maintenance and inspections on the intelligent transport systems listed in accordance with the manufacturer's requirements. The Operating Company shall provide 30 days prior to Commencement of Service Date 2 an inventory of intelligent transport systems equipment in liaison with the Director and the Traffic Scotland Operations and Infrastructure Services Contractor which will detail the assets to be passed over to the Traffic Scotland Operations and Infrastructure Services Contractor as determined by the Director. The Traffic Scotland Operations and Infrastructure Services Contractor will take over the operation, management and maintenance of the assets listed in the inventory from Commencement of Service Date 2. The Operating Company shall undertake all such work as is required for the migration of these assets on to the Traffic Scotland Service system.

This is Annex 3.7/A to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/A– CONTACT LIST OF NETWORK OPERATIONS SERVICE PROVIDERS

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/A– Contact List of Network Operations Service Providers

Group A - Main Network Operations Service Provider

Traffic Scotland Operations and Infrastructure Services Contractor

AMEY OW Ltd

Precision House
Off McNeil Drive
Eurocentral
ML1 4UR

Group B – Other Network Operations Service Providers working on the Trunk Road

Traffic Scotland Systems Contractor - the Traffic Scotland Systems Contractor will be in place before or during this contract. The current Network Operations service providers carrying out a systems support role are: —

IBI Group
The Athenaeum Building
8 Nelson Mandela Place
Glasgow
G2 1BT
Tel 0141 331 4500
Contact – Graeme Scott

Cubic (ITMS Ltd)Cavendish House
Prince's Wharf
Thornaby
Stockton-On-Tees
Cleveland
TS17 6QY
Tel 0164 263 6700
Contact – Russ Taylor

This is Annex 3.7/B to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

**ANNEX 3.7/B – NOTIFICATION OF PLANNED OPERATIONS AND WORKS CONTRACTS
AND WORK IN THE VICINITY OF NETWORK OPERATIONS EQUIPMENT**

SCOTTISH MINISTERS' REQUIREMENTS**SCHEDULE 3 PART 7****NETWORK OPERATIONS SERVICES****ANNEX 3.7/B – Notification of Planned Operations and Works Contracts and Work in the Vicinity of Network Operations Equipment**

Notification of Fixed Network Operation site events	Sheet		(to be continuous with previous sheets – e.g. 2006/12):	
	Ref			
	Date:			(date when sheet submitted)
	Name:			(of individual responsible for sheet contents)
	Unit:		(Forth Bridges Unit)	

Site Reference	Date (from)	(Date to)	Provisional or Confirmed	Event Details	Remedial Actions Carried Out or Required	Network Operations Acknowledged (Date / Initials)	Additional Information
(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)

Column Notes:

- A References must be those contained within the inventory information.
- B If the Operations, Works Contract or work takes place on a single day then insert that date here, otherwise start of event.
- C If B does not reflect a single day then insert finish date here.
- D Indicate if dates are provisional or confirmed.

- E Type of Operations, Works Contract or work to be derived from the digits set:
- Digit 1
1. Operations or Works Contracts.
 2. Accident or Incident.
 3. Other events.
- Digit 2
- A: Works by Works Contractor.
- B: Work by authorised contractor.
- C: Work by Undertaker.
- D: Work by other.
- F To include any Operations, Works Contract or work carried out to make situation safe and proposals for any necessary repairs or modifications to, or at, the Network Operations sites.
- G Network Operations service provider to acknowledge receipt of this form.
- H Any additional comments as appropriate.

This is Annex 3.7/C to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

**ANNEX 3.7/C – NOTIFICATION OF PROPOSED NEW NETWORK OPERATIONS
SERVICES SITES**

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/C – Notification of Proposed New Network Operations Services Sites

Date: (date when sheet supplied)
 Name: (of individual responsible for sheet contents)
 Unit: (Forth Bridges Unit)

Route (A)	Scheme Name (B)	Start Date (C)	End Date (D)	Approx Value (E)	Brief Description of Scheme (F)	Proposed Site Location (G)	Proposed Site Type (H)

General Notes

- 1 Use this form to record any proposals for the creation of new Network Operations services sites.
- 2 Use one line for each proposed site.

General Notes

- A e.g. M90.
- B The name by which the Operations or Works Contract is known within this Contract.
- C Dates can be approximate.
- D Dates can be approximate.
- E For example, whether resurfacing or road realignment, etcetera. If appropriate, sketches may be supplied to make Scheme type clear.
- F This can be either by description or by Ordnance Survey Grid Reference - if appropriate, sketches may be supplied.
- G This should specify the equipment type, for example, with traffic counting sites, whether volumetric or classifier.

This is Annex 3.7/D to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

**ANNEX 3.7/D – NOTICE TO NETWORK OPERATIONS SERVICE PROVIDER OF
DAMAGE OR SUSPECTED DAMAGE TO NETWORK OPERATIONS EQUIPMENT**

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/D – Notice to Network Operations Service Provider of Damage or Suspected Damage to Network Operations Equipment

Notice to Network operations providers of damage/suspected damage to Network operations equipment

Sheet Ref:

Date:

Name:

Unit:

(to be continuous with previous sheets - e.g. 2004/12)

(date when sheet submitted)

(of individual responsible for sheet contents)

(Forth Bridges Unit)

Site Reference (A)	Date (s) damage occurred/identified (B)	Details (C)	Operation/ Works/ work Type(D)	Organisation which caused damage (if known) (E)	Additional Notes (F)

Column Notes:

- A References must be those contained within the inventory information.
- B Insert the date when the damage occurred or the date the damage was identified – indicate which is applicable.
- C Details of the damage and effects of the damage.
- D Insert details of the cause of the damage (if known).
- E Name and contact details of organisation which caused the damage (if known).
- F To include all relevant details not covered elsewhere in the form – to include contact details in all cases.

Use separate additional sheets if required, but make reference to them here.

This is Annex 3.7/E to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

**ANNEX 3.7/E – NETWORK ACCESS FORM FOR THE REQUEST OF INFORMATION ON
PLANNED OPERATIONS, WORKS CONTRACTS, WORKS AND EVENTS FROM
UTILITIES AND OTHER THIRD PARTIES**

SCOTTISH MINISTERS' REQUIREMENTS**SCHEDULE 3 PART 7****NETWORK OPERATIONS SERVICES****ANNEX 3.7/E – Network Access Form for the Request of Information on Planned Operations, Works Contracts, Works and Events from Utilities and Other Third Parties**

Input Operating Company references and logo in this area (Document, Issue, Related To, Page No. etc.)

Before completing this form, please read the conditions and general requirements for applicants wishing to carry out work on the network.

Documents required with application	Req	Rec'd	App'd	Sign'd	Unit
Location Plan					
Site Specific TM layout					Ref No.
SRWR ref					SRWR Ref No.
Road Opening Permit					Depot (if applicable)
Planning Consent Approval					
TM Method Statement					

Applicant / Originator of Works:												
Traffic Management Contractor:												
Contractor for the Works:												
Contractor Address:										Head Office Tel:		
										Site Contact Tel:		
										Contractor 24hr Tel:		
										Traffic Man. 24hr Tel:		
Contractor Email Address:												
Route No.:												
Location:												
OS Start	E									N		
OS End	E									N		
OS Centre Point (if applicable)	E									N		
Start Section (7 digits)												
End Section (7 digits)												
Chainage Start*****												
Chainage End*****												
List sections affected from start to finish												
Description of Works (include direction)												

Works Supervisor Details:							
Contact No. for Works Supervisor:							
Lane Occupation Start Date:					Lane Occupation End Date:		
Working Days	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Lane Occupation Start Time*							
Lane Occupation End Time*							
Closure Type**:							

Lanes Closed***:	
Speed Limit on Road / Proposed Speed Limit:	
Works Method Statement:	Health & Safety Plan:
Consultation with Local Authorities, Police etc:	
Is Traffic Order required? (If Yes, approval is conditional):	
Expected Delays****	

Notes

Access will only be granted on condition that the Traffic Scotland Operations and Infrastructure Services Contractor is informed by telephone (0131 203 8700) 15 minutes prior to the first cone being placed on the network and again when all traffic management has been lifted.

* Time Restrictions may apply

** Standard or Relaxation – See Chapter 8 – Traffic Sign Manual

*** L1, L2, L3, slip lane, hardshoulder, lay-by or verge

**** To be completed by the Journey Time Reliability Coordinators

***** Relative to the start of that section

Required for Automated Diary Facility

Required for OC Audit trail

Add to Automated Diary Facility for OC & TS info

Operating Company Response

Approval - Yes / No:

Signed:

Title:

Date:

This is Annex 3.7/F to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/F – CODING FOR ESTIMATED TRAFFIC DELAYS

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/F – Coding for Estimated Traffic Delays

Number	Description	Time
1	Little or no delay	Up to 4 minutes
2	Slight delay	More than 4 minutes but less than 8 minutes
3	Moderate delay	More than 8 minutes but less than 12 minutes
4	Serious delay	12 minutes or more

Escalation of Delays

Base Level – code 1

The base level is ascribed to any roadworks (as defined) on the Trunk Road network within the Unit, or in adjacent unit or units, or off the Trunk Road.

First Level – code 2

The first escalation is to slight delay as defined above. The notification requirements specified within Schedule 3 Part 7 shall apply.

Second Escalation – code 3

The second escalation is to moderate delay as defined above. The notification requirements specified within Schedule 3 Part 7 shall apply.

Third Escalation – code 4

The third escalation is to serious delay as defined above. The Operating Company shall determine this escalation level and then seek agreement with the Traffic Scotland Operations and Infrastructure Services Contractor. Notification requirements specified within Schedule 3 Part 7 shall apply in such circumstances.

This is Annex 3.7/G to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/G – OVERVIEW OF DELAY MODELLING TOOL

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/G – Overview of Delay Modelling Tool

Provision of the Delay Modelling Tool

The delay modelling tool facilities will be supplied by the Director.

Access to the Delay Modelling Tool

No later than 25 Working Days prior to Commencement of Service Date 1 the Operating Company shall provide and maintain at the Central Office a broadband internet connection for access to the delay modelling tool.

Prior to ordering this connection, the Operating Company shall contact the Director to confirm the exact requirements.

Features

The delay modelling tool will use a simple demand/capacity flow model to simulate conditions at a location on the Trunk Road network.

The delay modelling tool will estimate the delay in minutes and the approximate queue length in kilometres resulting from a reduction in operational capacity at a specified location on the Trunk Road network. Estimated delays will take into account delays that are the result of recurrent congestion. The delay modelling tool will provide a delay value relating to the additional journey time that is in excess of the free flow journey time (total delay) and a further delay value for the additional time in excess of the typical journey time for the specified time of day and day of week (normal delay). The location will be defined by network link(s), typically junction to junction, or by subsections of a link.

For roadworks that extend over a number of links, the capacity reduction will be assumed to apply at the most upstream link or section.

Roadworks interventions that affect both directions at a network location will require separate analysis and identification by the Operating Company.

The delay modelling tool will estimate the delay cost based on average traffic composition and value of time figures provided by *Scottish Transport Appraisal Guidance (Scot-TAG)*.

A facility to specify an upstream diversion rate as a percentage of the demand flow in vehicles per hour will be provided. The Operating Company shall use this to estimate the cost saving resulting from the implementation of the diversion.

The delay modelling tool will have access to tables of normal flow rates and speeds at different times of the day and days of the week for network links that have monitoring facilities. These will be in three minute or 15 minute periods depending on the level of equipment provision at the location of the monitoring facilities.

The delay modelling tool will have access to tables of normal journey times for some network links. The Operating Company may use these in addition to the point information from monitoring sites to improve the accuracy of the delay estimation.

The Operating Company shall record the output from the delay modelling tool analysis relating to a confirmed roadworks entry in the Automated Diary Facility using the appropriate Automated Diary Facility identifier.

The delay modelling tool will provide details of capacity flow rates and capacity reductions for different road types and typical closure scenarios based on values in the *Design Manual for Roads and Bridges*. These may be overridden by a delay modelling tool user.

Data Inputs

The delay modelling tool will contain appropriate details of:

- (i) Normal traffic flow, speed and composition,
- (ii) Normal link journey times,
- (iii) Link length, free flow speed and journey time and capacity, and
- (iv) Value of time figures.

Additional information required to model a capacity reduction will be required to be entered by a delay modelling tool user; this will include:

- (i) Location of the works in terms of links and/or sections of links,
- (ii) Chainage in metres from start of link/section to start of works,
- (iii) Length of works,
- (iv) Day(s) of week,
- (v) Start/end time,
- (vi) Lanes closed,
- (vii) Confirmation of free flow speed on the link/section (suggested by the delay modelling tool),
- (viii) Confirmation of link capacity remaining after roadworks implemented (suggested by the delay modelling tool),
- (ix) Expected diversion rate (to estimate benefit of diversion), and
- (x) Length of diversion route.

Report Outputs

The Operating Company shall estimate the following information for each model analysis:

- (i) Details of works location (links/sections),
- (ii) The delay in minutes during the period while the roadworks are implemented and until resultant queues have cleared (at intervals of three minutes or 15 minutes),
- (iii) The queue length (at intervals of three minutes or 15 minutes),
- (iv) The total delay in vehicle hours,
- (v) The total queue size in vehicle kilometres, and
- (vi) The cost/diversion benefit of the roadworks in terms of lost time/saved time

This is Annex 3.7/H to Schedule 3 Part 7 referred to in the foregoing Agreement between Scottish Ministers and Amey LG Limited.

SCOTTISH MINISTERS' REQUIREMENTS

SCHEDULE 3 PART 7

NETWORK OPERATIONS SERVICES

ANNEX 3.7/H – INTELLIGENT TRANSPORT SYSTEMS EQUIPMENT

SCOTTISH MINISTERS' REQUIREMENTS**SCHEDULE 3 PART 7****NETWORK OPERATIONS SERVICES****ANNEX 3.7/H – Intelligent Transport Systems Equipment**

Forth Road Bridge Corridor Asset Register	
Asset Description	Number
<i>Abnormal Load</i>	
1 x Signal head traffic signal pole	2
2 x Dual head traffic signal pole	2
Abnormal load telephone	2
<i>Emergency Response Telephones (ERT's)</i>	
ERT's	14
<i>Assets mounted on Structures</i>	
Cantilever structure with 2 no lane signals	1
Footbridge with 2xANPR, 1xCCTV, 1xSecurity Camera	1
<i>Weather Station</i>	
Weather Station (Findlay Irvine)	2
<i>Cabinets</i>	
Cabinet	6

Notes:

1) ANPR - Automatic Number Plate Recognition Cameras (operated, maintained and managed by the Police)

