

PART 6 – NETWORK OCCUPANCY MANAGEMENT

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6.1 Network Occupancy Management

6.1.1 Introduction

This chapter sets out the procedures and arrangements for the management of road space occupancy required for works activities on the Highways Agency's motorway and all purpose trunk road network.

This information was originally released as a stand alone Process Document prior to its inclusion in this manual. Although minor amendments have been made to the language to ensure consistency here, the intention has not been to change the process. This chapter forms part of the Agency's standard for operation of its network and aligns with the May 2007 version of Asset Process number 4 (AP4).

These new arrangements become effective from 1st April 2007.

6.1.1.1 Background

The Highways Agency has a legal obligation under Section 59 of the New Roads and Street Works Act 1991 (NRSWA) to use its best endeavours to coordinate the execution of works of all kinds.

The Highways Agency has also been given a clear remit by Ministers to better manage its network with the objective of tackling congestion and improving journey time reliability.

6.1.1.2 Purpose

The purpose of this chapter is to set out roles, responsibilities, including mandatory requirements for Service Providers, and procedures for the management of network occupancy.

6.1.1.3 Network Occupancy Management Plan

A 'Network Occupancy Management Plan', setting out the approach to managing the Network, will be required to be produced and maintained for each Network. It will be used to demonstrate that the procedures detailed in this new process are used to ensure the effective management of road space. The plan will remain under continual review to ensure that the changing needs are embraced with effective network management. The key elements of the plan are detailed in Annex 6.1.1 and highlighted in this chapter.

Service Providers must assist their Service Manager with the preparation of a Network Occupancy Management Plan for submission to the Regional Network Access Manager.

6.1.2 Objectives

6.1.2.1 Process Objectives

The process introduces an improved set of procedures for the management of road space occupancy with the primary objective of reducing road user delay and the associated delay cost, through a structured evidence based decision making approach.

Rigorous application of the new process will ensure the potential reduction in average vehicle delay (AVD) is maximised. Improved network occupancy management will contribute to meeting the Agency's current public service agreement (PSA) Journey Time Reliability Target (further guidance included in Annex 6.1.4) and any other future congestion related performance targets.

6.1.2.2 Audience

The management of network occupancy is a wide ranging task involving many parts of the Highways Agency's organisation and many other external stakeholders. This chapter should therefore have a similarly wide ranging audience. The process described in this document is owned by Traffic Operations Directorate and is delivered primarily by the Service Managers and their Service Providers.

6.1.3 Scope

6.1.3.1 Process Scope

This section sets out the scope of the new process and defines the activities covered, and those activities not covered by the new network occupancy management arrangements.

The new arrangements do not fundamentally change any existing responsibilities (see below) but simply provide greater clarity on roles, responsibilities and objectives.

6.1.3.2 Primary Responsibilities

The primary responsibility for coordinating works activity on the network rests with the Service Manager and his team. Under existing MAC, MA/TMC and DBFO arrangements this responsibility is delegated contractually to the Service Providers.

There are a number of contract provisions that support the coordination function including the 'watchman role' and more specifically, the delegation of duties and powers under NRSWA.

Other organisations promoting and undertaking works on the Network should act in a cooperative manner with the Service Manager and his Service Provider. This is often a direct contractual requirement for other works promoters in the Highways Agency and is a legal obligation for statutory undertakers.

6.1.3.3 Activities Covered

Any activity on the Network that may contribute, either directly or indirectly, to congestion on the Network is covered by this process. This includes activities on the hard shoulder, cycle tracks and footways.

Activities covered by this process are categorised as follows:

- A. Major Schemes
- B. Area Schemes
- C. Area Renewals
- D. Routine Works
- E. Urgent Routine Works
- F. Regional Technology Schemes
- G. Regional Technology Works
- H. Urgent Regional Technology Works
- I. Street Works
- J. Urgent Street Works
- K. Developer Works
- L. Licensee Works
- M. National Technology Works

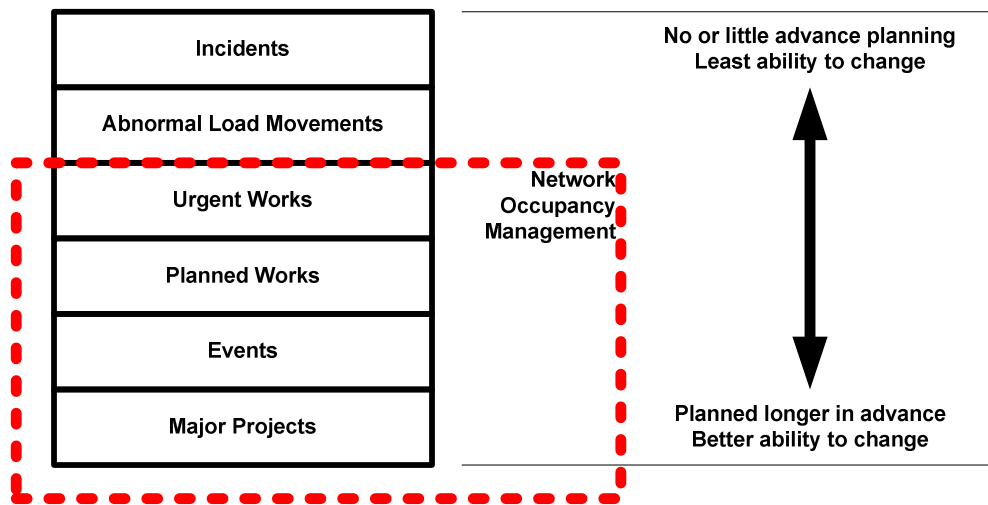
- N. Urgent National Technology Works
- X. Events

Although considered as ‘off network’, ‘events’ are considered an ‘activity’ in respect of this process.

Definitions of these activity categories are detailed in Part 0 – Introduction of the NMM.

6.1.3.4 Context & Hierarchy

The management of network occupancy is all about coordinating activities on the Network. This requires that consideration is given to all planned activities so that adjustments can be made to the occupancy configurations of individual activities such that the Network operates in the most efficient manner possible.



The above diagram shows a hierarchy of activities. In general, the longer in advance the activity is planned the better the ability to change occupancy configurations as part of the coordination process. The obvious exception to this is events, which are generally fixed with limited scope for influencing change.

As discussed below, there are certain activities that fall outside of the scope of this process.

6.1.3.5 ‘Out of Scope’ Activities

There are a number of specific activities that are explicitly outside of the scope of this process, these are:

- 1) Abnormal Load Movements

The recording and coordination of abnormal load movements is not covered by the Network Occupancy Management process. Better information arising from the improved process will however provide a basis on which abnormal load hauliers can make better choices about routes and timing of movements. Further information concerning abnormal load movements is included in this document at 6.5.

- 2) Traffic Incidents

It is already a requirement for details of traffic incidents to be recorded on the Scheduled Road Works (SRW) system by Service Providers, see this document at 6.2, however, they

are not considered within the Network Occupancy Management process. The management of traffic incidents and the interrelation and interaction with pre-existing works on the network is considered in the Highways Agency's 'Asset Processes', numbers 1, 2 and 3.

3) Activities that do not have an impact on congestion

These are any activities where traffic management is not required. For example, short duration stops on the hard shoulder or mobile inspections not requiring a mobile lane closure.

Although the activities detailed above fall outside of the scope of the process, there are other obligations to manage those activities including specific requirements to populate relevant information on the SRW system. Further explanation of this is included in this document at 6.2.

6.1.3.6 Relationship to Other Processes & Policies

The arrangements for management of network occupancy, as detailed in this chapter, do not remove the need to follow other processes or policies. The new process provides an overarching framework for the management of planned activities on the Network.

There are existing arrangements in place for the evaluation and mitigation of delay impacts from specific schemes, particularly larger schemes, and these arrangements should continue to be applied. Examples include scheme specific cost benefit analysis and value management processes. A number of new initiatives relating to the management of road work activities at a scheme level are currently being developed and rolled out as part of the Highways Agency's delivery programme associated with the current PSA Target.

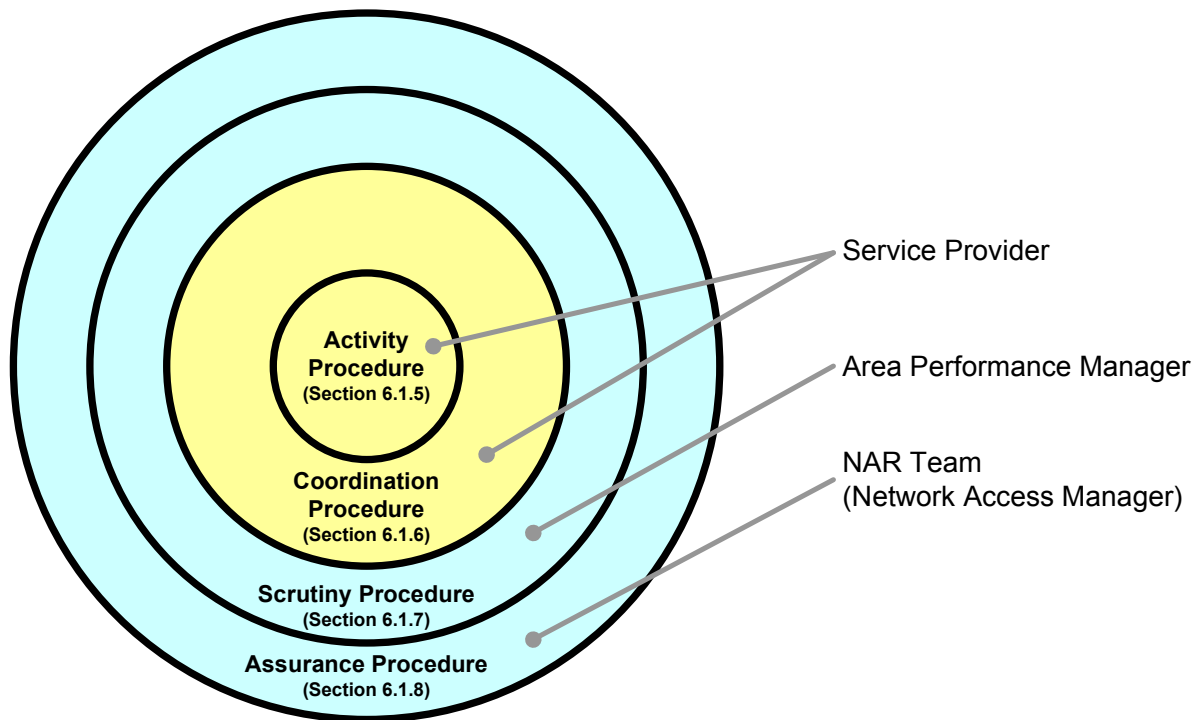
Existing arrangements for management of abnormal load movements and traffic incidents should be followed- see 6.5. The Network Occupancy Management process is complementary to these existing arrangements.

The Network Occupancy Management process extends the requirements of Chapter 6.2 of this document, policy originally published under cover of AMM58/05, but does not supersede them.

6.1.4 Process Overview

6.1.4.1 Introduction

This section provides an overview of the activity based and periodic procedures that comprise the network occupancy management process.



The colour coding used above is used in the remainder of the chapter. Light yellow denotes a function that is primarily the Service Providers responsibility and light blue denotes a function that is primarily the Highways Agency's responsibility.

6.1.4.2 Activity Procedure (Section 6.1.5)

This procedure details the requirements and responsibilities for ALL 'activities' which take place on the Network and that are within the scope of the Network Occupancy Management process. This is primarily the management of activity booking and evaluation of activities on the network.

The Service Provider is responsible for discharging this procedure for any activity taking place on the Network.

6.1.4.3 Coordination Procedure (Section 6.1.6)

This procedure details the requirements and responsibilities to enable 'coordination' to be carried out in accordance with the Network Occupancy Management process. This is primarily the management of road space occupancy to minimise road user delay through a structured procedure of coordinating multiple activities.

The Service Provider is responsible for discharging this procedure for any activity taking place on the Network.

6.1.4.4 Scrutiny Procedure (Section 6.1.7)

This procedure details the requirements and responsibilities to enable 'scrutiny' to be carried out in accordance with the Network Occupancy Management process. This is first, an assessment of the Service Provider's approach to the forward planning of works activities on the Network. Second, it is a retrospective interrogation of the Service Providers' performance in respect of the coordination of works. Third, it is a review of the Service Providers contract compliance in delivering their duty with regard to network management occupancy.

The Service Manager is responsible for discharging this procedure.

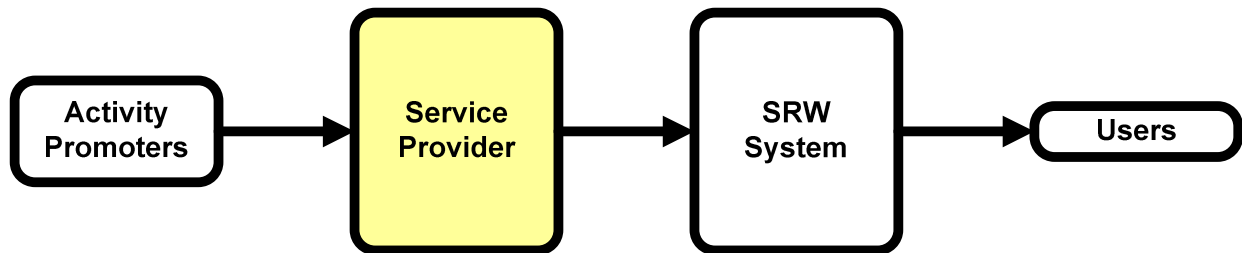
6.1.4.5 Assurance Procedure (Section 6.1.8)

This procedure details the requirements and responsibilities to enable 'assurance' to be carried out in accordance with the Network Occupancy Management process. There are two specific functions, compliance auditing and regional and national coordination, to ensure that network occupancy management is being carried out effectively and in accordance with the process.

The Highways Agency's Network Access and Resilience Team deliver this procedure for which the Highways Agency's Network Performance Manager is responsible.

6.1.4.6 Information Flows

Proper management of network occupancy requires complete knowledge of all planned activities. The Highways Agency's SRW system is the single central repository for information on all planned activities. Further information on SRW can be found in Chapter 6.2.



Although the primary use for the SRW system is by the Service Provider in delivering his obligations under this process, there are many users of the information contained with system.

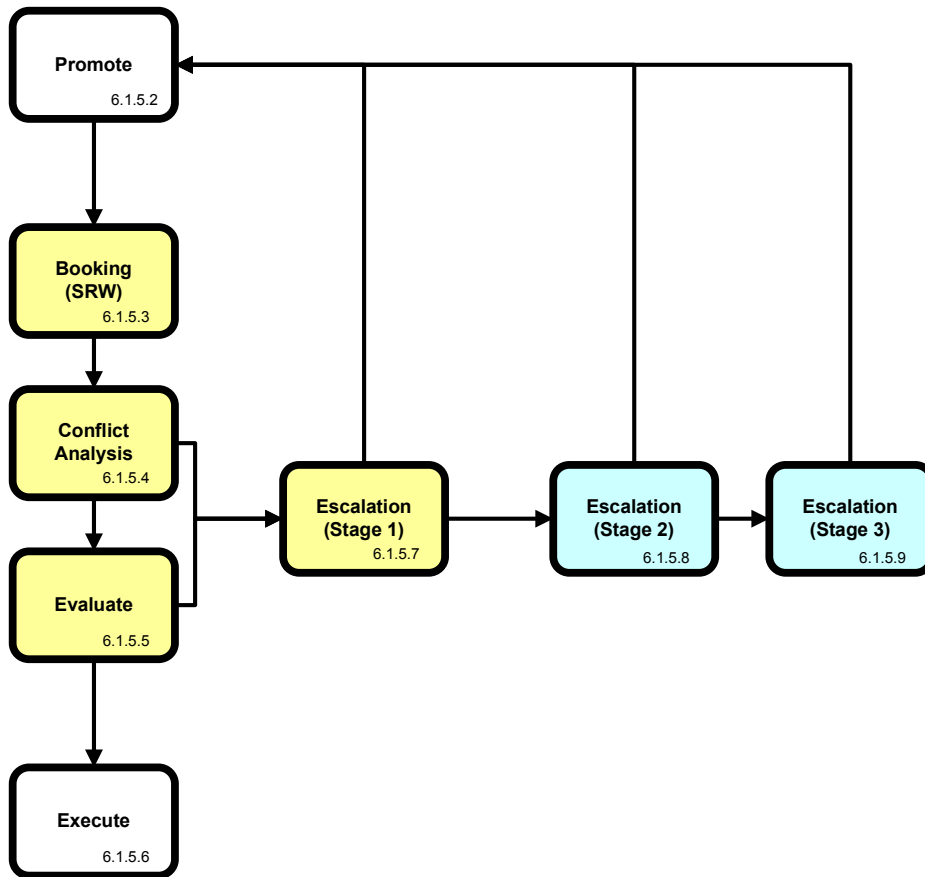
The above diagram summarises the information flows to and from SRW and emphasises the importance of the service providers' role in populating the SRW system.

6.1.5 Activity Procedure

6.1.5.1 Introduction & Overview

This section sets out the activity level procedure which must be applied to all activities covered by the Network Occupancy Management process.

The following diagram depicts the elements of the Activity Procedure.



6.1.5.2 Promote

Every activity on the Network is as a result of an identified need. Activities are either promoted by the Highways Agency in order to improve or maintain the network infrastructure or they are promoted by third parties in order to place or maintain apparatus (statutory undertakers and private licence holders) or to accommodate a changed requirement for access the network (developers).

In this process, Activity Promotion is the act of informing the Service Provider of the activities that are planned. This information must be provided in the prescribed manner as detailed under 'Booking' below and in Annex 6.1.2- Activity Booking Information.

It should be noted that there may be a number of different promoters for activities within each category, for example, major schemes might be identified by the Highways Agency's Network Strategy or Major Projects Division. In order to ensure consistency and clarity of roles the table below defines responsibility for notification as well as identifying the promoter. The responsibility for notification will always rest with either the Service Provider or the Service Manager, with the exception of major schemes, where the Highways Agency's Network Performance Manager is responsible for ensuring the Service Provider is supplied with the correct information.

The following table details responsibility for notifying the Service Provider of these activities and providing accurate booking details:

Activity	Promoter	Responsibility for Notification
A - Major Schemes	Scheme Sponsor (NS or MP)	Network Performance Manager
B - Area Schemes	Service Manager	Service Manager
C - Area Renewals	Service Manager	Service Manager
D - Routine Works	Service Provider	Service Provider
E - Urgent Routine Works	Service Provider	Service Provider
F - Regional Technology Schemes	Contract Project Sponsor	Service Manager
G - Regional Technology Works	Contract Project Sponsor	Service Manager
H - Urgent Regional Technology Works	Contract Project Sponsor	Service Manager
I - Street Works	Statutory Undertaker	Service Provider
J - Urgent Street Works	Statutory Undertaker	Service Provider
K - Developer Works	External Party	Service Manager
L - Licensee Works	External Party	Service Provider
M - National Technology Works	Contract Project Sponsor	Service Manager
N - Urgent National Technology Works	Contract Project Sponsor	Service Manager
X - Events	External Party	Service Provider

The Service Provider must complete the Activity Promotion process for those activities above where they are identified as having responsibility for notification.

In many cases day to day responsibility for promoting work to the Service Provider will be delegated to a contractor. For example, with technology works the responsibility might be delegated to the TechMAC provider. It should also be noted that some area contracts include technology maintenance and therefore the promoter would be the Service Provider.

Delegation is also likely to occur with scheme works, private developer works and works undertaken under licence. In such cases the arrangements will be clearly set out in the individual contract, agreement or licence.

In respect of DBFO contracts responsibility for promotion and notification of Area Renewals rests with the Service Providers.

In the case of events, there is no legal duty to notify the Highways Agency of events and therefore the Service Provider must proactively source information from the organiser or from other sources for example, NRSWA Coordination meetings, Safety Advisory Group (SAG) meetings, licensing authorities and relevant police authorities.

As each area will have different arrangements in delivering this element of the process, the 'flow of information', detailing the arrangements outlined in the above table will be included within the specific area Network Occupancy Management Plan. The plan will be prepared by the Service Manager and the Service Provider and it will define the precise responsibilities for notification of the activities, including full details of delegations. These details will be made available to all parties mentioned within the plan.

6.1.5.3 Booking (SRW)

Every activity that falls within the scope of this process must be entered onto the SRW system, firstly as a provisional and then as a firm booking, including any subsequent changes. A provisional booking is made further in advance than a firm booking and may include less detail.

The Service Provider must complete the activity booking in all cases for any activity which is to take place on the Network. The information required to be entered onto the SRW system is defined in Annex 6.1.2 - Activity Booking Information and the information must be entered in accordance with the requirements detailed below.

Data Entry Requirements

The following table defines the minimum requirements for advance entry of data onto the SRW system by the Service Provider.

Activity	Provisional Booking	Firm Booking
A - Major Schemes	60 months	6 months
B - Area Schemes	12 months	3 months
C - Area Renewals	12 months	3 months
D - Routine Works	12 months	3 months
E - Urgent Routine Works	N/A	15 minutes / 3 days
F - Regional Technology Schemes	12 months	3 months
G - Regional Technology Works	12 months	3 months
H - Urgent Regional Technology Works	N/A	15 minutes / 3 days
I - Street Works	12 months	3 months
J - Urgent Street Works	N/A	15 minutes
K - Developer Works	12 months	3 months
L - Licensee Works	12 months	1 month
M - National Technology Works	12 months	3 months
N - Urgent National Technology Works	N/A	15 minutes / 3 days
X - Events	N/A	12 months

These requirements are dependent on knowledge of the activity being available and therefore endeavours must be made by the Service Provider to secure the necessary information from promoters. Nevertheless, there may be occasions where certain activities are not known about within the timescales above, although these will be relatively rare.

It is important to note that bookings can be amended at any time up to commencement of the activity. The firm booking does not mean that activity configurations cannot be subject to further refinement. This is likely to be the case as proactive coordination of activities is undertaken.

In respect of urgent works, the requirement for firm booking is 3 days in advance in cases where the permanent category 1 defect repair is undertaken subsequent to a temporary repair.

Street Works

The timing of notifications given by Undertakers in respect of Street Works is defined in regulations under the New Roads and Street Works Act 1991 (NRWSA). Those timings are an absolute minimum and Service Providers must encourage undertakers to work to the standards detailed in this document.

Activities by Licensees

Activities of third parties working under Highways Act 1980 licences should be closely managed by the Service Provider and the requirements for the submission of information, including timing, should be detailed within the individual licence agreements.

Activities by Developers

Activities of third parties working under planning regulations should be closely managed by the Service Provider and the requirements for the submission of information, including timing of the works, should be detailed within the individual planning conditions and contract agreements.

6.1.5.4 Conflict Analysis

As part of the activity booking procedure, the functionality of the SRW system identifies any direct conflict between competing demands for the same road space from different activities. This is a 'simplistic' comparison of data on the system and should be taken as such by the Service Provider.

The Service Provider must review the results and resolve with the activity promoter and if necessary utilise the Escalation procedure.

6.1.5.5 Evaluate

Activity Evaluation is the core element of the Activity Procedure. The primary objective is to use the delay and delay cost evaluation to make informed decisions in respect of occupancy configurations.

At this stage of the process an evaluation is made on an individual works activity. Examining how adjustments may be made to one specific works in order to reduce delay and delay cost.

Once activity details have been entered onto SRW, the system will provide an instant evaluation of delay and delay cost. The Service Provider must adjust occupancy configurations in order to produce an optimum configuration taking into account the evaluated delay and delay costs.

The evaluation stage should be used to test broad options for larger works. Where options have been identified that offer significant delay savings but where there are consequential increased works costs, the options must be presented to and discussed with the Service Manager. A decision on which option to take forward will then be made based on consideration of the best overall value.

For smaller works and routine operations, slight changes to occupancy configurations may result in delay savings without any significant consequential increase in works costs. For example, moving the window for overnight works to start from 8pm rather than 7pm may produce a significant delay saving without the need to change shift patterns.

By using the evaluation information, a Service Provider will be able to demonstrate they are working to an evidence based decision making approach and also demonstrate tangible benefits resulting from changes to occupancy configurations.

It is important to remember that the evaluation produces estimated delay figures based on a number of assumptions and certain network specific information. Clearly the figures produced should be treated as indicative rather than absolute. Nevertheless, the figures will provide a reasonably accurate guide if assessed on a relative basis by comparing delay evaluations produced for the same activity booking by entering different configurations.

The delay and delay cost evaluation provides information to help in the decision making process, however, it cannot provide a definitive assessment of potential AVD impacts under the PSA target. The system does indicate delay and delay cost that occurs during PSA measurement hours and therefore this information can be used to ensure delay is minimised at times where an adverse affect on AVD may result. Clearly Service Providers must always take steps to change occupancy configurations to ensure that potential AVD is kept to a minimum.

The Service Provider must undertake Activity Evaluation at the time of Activity Booking.

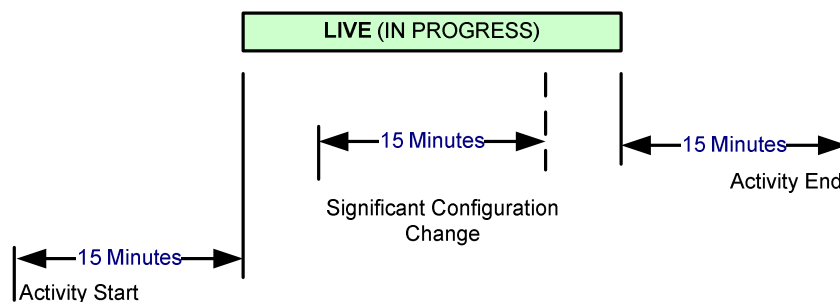
6.1.5.6 Execute

Activity Execution is the execution of the activity on the network.

It is the responsibility of the Activity Promoter (or nominated representative) executing the works to inform the Service Provider at three key stages of the activity:

1. the start of the activity,
2. at any significant change in occupancy configuration during the activity (which results in a change in capacity such as a change in the total number of lanes available), and,
3. at the end of the activity.

The following diagram depicts the requirements for entry of data onto the SRW system by the Service Provider (there are a number of specific exceptions detailed below).



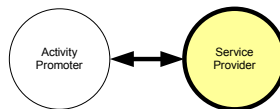
These requirements are for entry of data onto the SRW system and therefore the Service Provider must ensure that arrangements are put in place to ensure notification of information is undertaken in a timely fashion in order that the above requirements can be met.

In the case of urgent works (activity categories E, H J and N), there is no requirement for the notification of start of the activity, as this has effectively been provided at the time of notification and firm booking of the activity.

There is no requirement for the entry of activity start and activity end information for events (activity category X).

6.1.5.7 Escalation (Stage 1)

Escalation (Stage 1) is where a direct conflict is identified or where the evaluation indicates a significant consequential road user delay cost (and where mitigation may be possible). The Service Provider must escalate the issue to the Activity Promoter and request a change in the planned occupancy configuration to ensure road user delay is reduced. The Activity Promoter should then submit a revised configuration for the planned activity occupation to the Service Provider through the normal channels. The Service Provider must update the SRW system with these subsequent changes. Where escalation has not resulted in a change, and the matter is not subject to further escalation, details shall be entered on the system explaining the resolution of the problem.



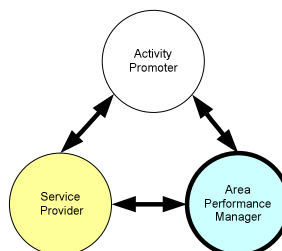
The Service Provider is responsible for Escalation (Stage 1).

Major Projects and Network Strategy Developer Projects are excluded from Escalation Stage 1 and should go directly to Escalation Stage 2 once identified.

6.1.5.8 Escalation (Stage 2)

Escalation (Stage 2) is where an issue is not resolved at Escalation (Stage 1). In such cases the Service Provider must initiate Escalation (Stage 2) by referring the issue to the Service Manager.

The Service Manager will discuss the issue with the Activity Promoter and seek agreement to the requested change. These discussions will usually involve the Service Provider and once the issue is resolved the Activity Promoter should then submit a revised configuration for the planned activity occupation to the Service Provider through the normal channels. The Service Provider must update the SRW system with these subsequent changes.



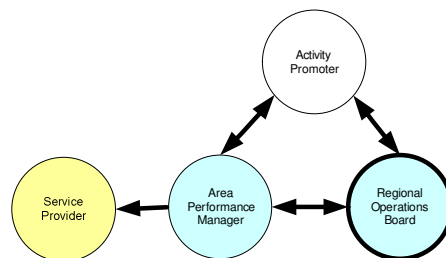
Where escalation has not resulted in a change, and the matter is not subject to further escalation, details shall be entered on the system explaining the resolution of the problem.

The Service Manager is responsible for Escalation (Stage 2). Escalation (Stage 2) includes escalation, using the established Tasking and Co-ordination arrangements, within the Traffic Operations hierarchy including Network Performance Manager and Divisional Director.

6.1.5.9 Escalation (Stage 3)

Escalation (Stage 3) is where an issue is identified that cannot be resolved within the Traffic Operations Directorate at Escalation (Stage 2). Escalation (Stage 3) involves cross directorate liaison and issues will be referred to the appropriate Regional Operations Board (ROB) or ultimately to the National Operations Group (NOG). In all cases the Service Manager is responsible for initiating Escalation (Stage 3) by referring the issue to the appropriate Regional Operations Board (ROB).

The appropriate ROB representatives will discuss with the Activity Promoter to seek agreement on the proposed change. These discussions would normally involve the Service Manager who may also require the involvement of his Service Provider. Once the issue is resolved the Activity Promoter should submit a revised configuration for the planned activity occupation to the Service Provider through the normal channels. The Service Provider must update the SRW system with these subsequent changes.



The Regional Operations Board is responsible for Escalation (Stage 3).

Escalation to Stage 3 should only occur in exceptional circumstances.

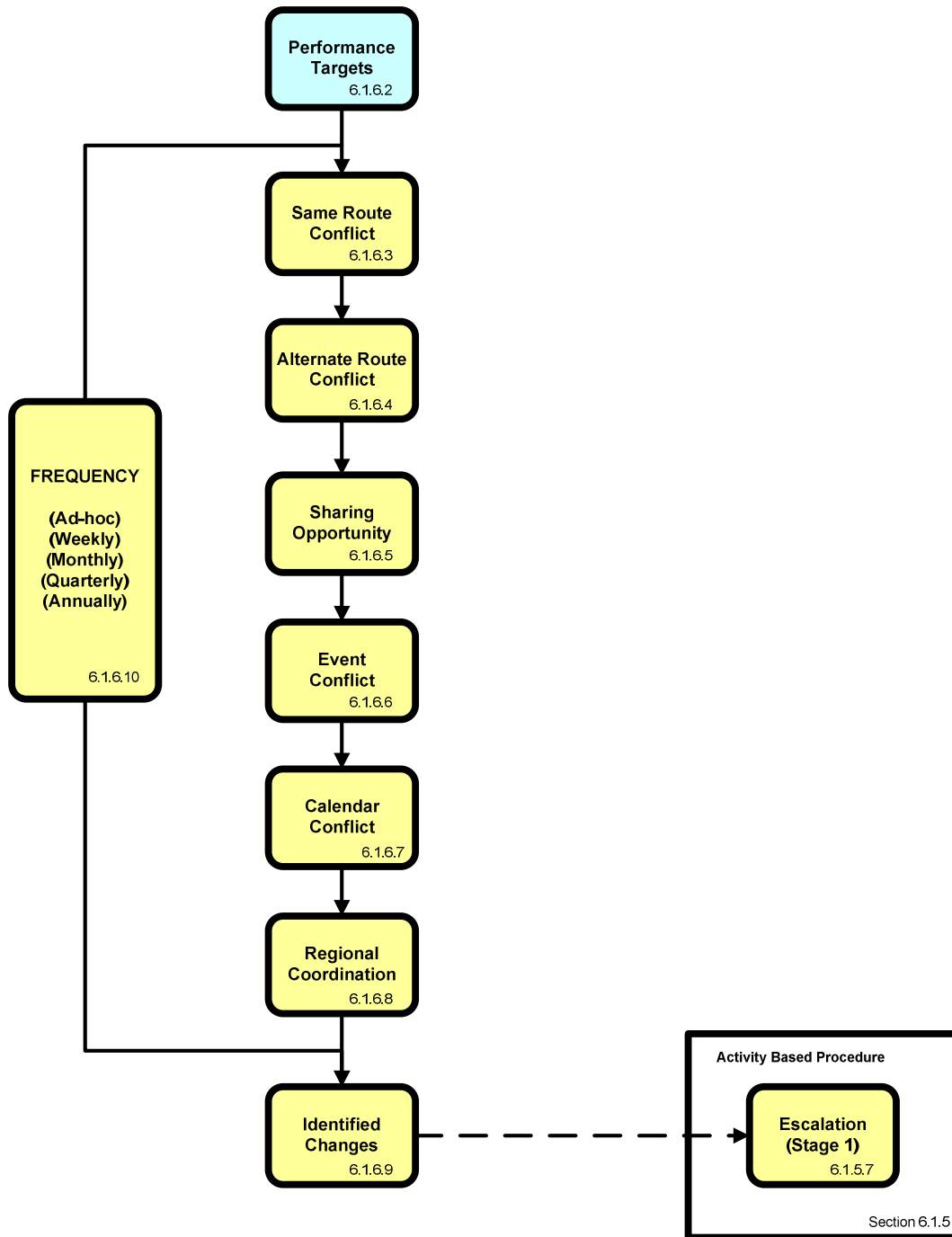
The Regional Operations Board only meets at a defined frequency. Escalation to Stage 3 is likely to relate to larger schemes which will generally have been notified well in advance and therefore it is likely that an issue can be addressed at one of the planned ROB meetings. If a more urgent resolution to an issue is required, the Traffic Operations representative on the ROB should initiate a direct dialogue with the representative from relevant directorates.

6.1.6 Coordination Procedure

6.1.6.1 Introduction

Coordination is the review and management of road space occupancy, to ensure the minimum road user delay results from a given amount of activity on the network. The Service Provider must undertake the Coordination Procedure.

The following diagram depicts the elements of the Coordination Procedure.



When undertaking the Coordination Procedure the Service Provider will need to consider the wider objectives, policies and obligations of the Agency. These will include:

- o **Environmental Considerations**

Moving the occupancy period of a works activity to a time of day where road user delay may be reduced may have the negative impact of creating excessive noise at unsocial hours. Steps should always be taken to reduce detrimental environmental effects of works activities. However, the greater benefit to society as a whole may outweigh the localised dis-benefit arising from works being carried out during unsocial hours.

- **Health & Safety Considerations**

All activities undertaken on the network present potential health and safety risks to road work workers and the public alike. These risks are always evaluated and reduced however the risks can never be totally removed. In assessing potential opportunities to reduce road user delay through coordination of works activities it is necessary to consider fully the implications on health and safety although it should not be assumed that an increased health and safety risk will always result in any proposed changes being rejected. In every case the balance between all issues should be taken into account.

- **Economic Considerations**

It will often be possible to improve the configuration of road space occupancy and reduce the impact on road users without increasing the works costs and this should always be the primary aim. There will be circumstances where, in order to reduce road user delay cost, it is necessary to reconfigure road space occupancy in such a way that there is a resultant increase in the direct cost of executing the works. In such circumstances the Service Manager will consider the costs and benefits.

- **Impacts on Other Stakeholders**

There may be occasions where actions taken to reduce the impact of works on road users on the Agency's own network may have a detrimental effect on road users on other highway authorities' networks. In such cases consideration should be given to the overall cost or benefit to society as a whole and appropriate action taken. Therefore it is essential to liaise with Local Highway Authority representatives at the earliest appropriate opportunity.

The role of coordination must be undertaken by the Service Provider with a wider remit than just the 'area' i.e. activity in adjacent areas. To fulfil this role the Service Provider must liaise with a range of personnel, specifically those of adjacent area service providers and local highway authorities. There are many groups providing platforms for the exchange of relevant advance coordination information, for example local NRSWA coordination meetings and Safety Advisory Groups.

6.1.6.2 Performance Targets

The Highways Agency must meet a variety of performance targets such as the Public Service Agreement (PSA) targets (further guidance on PSA Journey Time Reliability included in Annex 6.1.4). Performance targets will be set at an Agency wide level and will be cascaded down through the organisation so that the contribution required to meet the target at a regional, area or route level is clearly understood and visible to all.

Although Service Providers are contractually obliged to manage network occupancy these contractual obligations do not extend to meeting the Agency's overall performance targets. In undertaking their role of coordination, Service Providers must take into account the performance objectives of the Agency, along side all of the other considerations detailed above.

Making the Service Provider aware of the relevant performance targets is the responsibility of the Service Manager, who will review achievement against those targets. This awareness will include the examination of priority routes within a specific area or the management of specific works activities on a particular route or area.

In undertaking the coordination procedure consideration needs to be specifically given to the defined targets and the priorities of the routes on which activities are planned. In addition, the

relative significance of the activities should be considered and coordination effort focused on those activities with the potential to cause most disruption. The use of prioritised listings from the SRW system should be used to identify those activities requiring the greatest coordination input.

Any area or route performance targets, or priorities, will be set out in the Network Occupancy Management Plan.

6.1.6.3 Same Route Conflict

This is an assessment of whether multiple activities may conflict with each other on the same route. Currently, a set of guidelines exist, within the Road Users Charter 2002/3, regarding the proximity of works to each other which is based on a simple pre-defined distance. This should only be used as a simple guide when considering possible conflicts and should not be considered an absolute requirement. There may be occasions where there is merit in deliberately programming a number of activities to occur at different locations along the same route in order to concentrate the disruption in one clearly identified period. In such cases details of the route and time of the planned programme should be clearly publicised by the activity promoter.

The evaluation model within the SRW system does not calculate aggregated delay and delay cost for multiple works on the same route and therefore simply combining figures from the individual evaluations will give a significant overestimate. Care therefore needs to be taken when using the evaluation tool in these circumstances.

The Service Provider must undertake the identification of 'Same Route Conflicts'.

6.1.6.4 Alternate Route Conflict

This is an assessment of whether multiple activities may conflict with each other on potential alternative routes. This particularly addresses the need to ensure that major works are not carried out on routes where works are also being undertaken on their strategic diversion routes or other alternative routes. For example, in planning works on the M1 between London and Birmingham consideration would need to be given to any works planned to be undertaken at the same time on the M40. Service Providers should identify, for each route they manage, all of the other routes, both within and outside their area, where such consideration would be required.

In cooperation with local highway authorities, and using information available from them, any potential conflict with works on strategic or tactical diversion routes should be considered. Information on other authorities' works will not be included on the SRW system and therefore Service Providers will need to source information using the established lines of communications with other authorities.

The Service Provider must undertake the identification of 'Alternate Route Conflicts'. These will be detailed in the Network Occupancy Management Plan for the area.

6.1.6.5 Sharing Opportunity

This is an assessment of all planned activities at a specific location over a period of time to identify if there is any potential for changing the timings of activities so that traffic management arrangements can be shared.

This approach may appear to conflict with the existing proximity rules but these can be relaxed where an overall benefit can be demonstrated in terms of reduced road user delay.

The Service Provider must undertake the identification of a Sharing Opportunity.

6.1.6.6 Event Conflict

This is an assessment of potential conflict of works with planned off-network activities, such as county shows, football matches or pop concerts.

It should be noted that events are pre-planned activities that are generally 'fixed' in respect of timing and location and involve a number of diverse parties in their planning, for example the event organisers, the emergency services and local highway authorities. Therefore, the Service Provider must give consideration to other works activities on the network and the potential impact of the particular occupancy configurations planned to be deployed, as this may ultimately have an adverse impact on traffic.

In planning activities as part of the Network Occupancy Management process, consideration must be given to the potential changes to planned events such as a late kick off or the need to play extra time at a football match.

The Service Provider must identify and manage Event Conflict.

6.1.6.7 Calendar Conflict

This is an assessment of whether activities are being undertaken at a time where there is an increased risk of additional delay arising due to increases in traffic volumes as a result of seasonal variations and national and local holidays.

Consideration should be given to avoid undertaking works on public holidays where holiday traffic may significantly increase overall traffic volumes. The risk of adverse publicity arising from undertaking works at inappropriate times must always be assessed. Certain public holidays will see a reduction in overall traffic volumes: works should not be restricted simply because it is a public holiday although a balance will always need to be struck between the benefit gained from reducing overall delay and delay cost and the potential adverse publicity. In general, decisions should be made based on a demonstrable and defensible reduction in delay and delay cost.

Consideration must also be given to school holiday periods or 'works' holidays where traffic flow patterns may change significantly. The traffic data held in the SRW system, used to calculate the delay and delay cost, may not reflect the specific timing of holidays, particularly half-term holidays.

It is important that this issue is taken into consideration when planning network occupancy. The Service Provider must assess Calendar Conflict.

6.1.6.8 Regional Coordination

The Service Provider must carry out Regional Coordination which takes into consideration activities in adjacent areas and on the adjoining local road network.

This will include reviewing and assessing activities on the adjacent road networks and particularly considering any potential regional implications and impacts arising from specific individual activities, or from the interaction between different activities.

Effective Regional Coordination will require the Service Provider to work closely with neighbouring service providers and Local Highway Authority representatives. This may include the National Authorities for Scotland and Wales and their service providers. Liaison arrangements and contact details will be set out in the Network Occupancy Management Plan for the area.

Where a Service Provider considers an activity meets the definition of a 'Nationally Significant Activity' they must notify their Network Access Manager and provide all relevant information. The Network Access Manager will confirm whether the activity in question is to be treated as a 'Nationally Significant Activity', falling within the Network Access and Resilience Teams' oversight responsibility under their National Coordination role. In all cases, the Service Provider retains responsibility for coordination.

Further details of the National Coordination role, part of the Assurance Procedure, can be found at section 6.1.8.4.

6.1.6.9 Identified Changes

If the procedure is being applied robustly, changes to the occupation configuration of activities will arise. This will result in Escalation (Stage 1) at the Activity Procedure stage.

The Service Provider is responsible for identifying any potential changes required as a result of a coordination conflict. The Service Provider will act on any conflict in accordance with the procedures in this Network Occupancy Management process and must update the SRW system accordingly.

6.1.6.10 Frequency

The requirements for advance submission of information are driven by the need to facilitate the coordination procedure.

Coordination is undertaken on both a reactive basis in response to information received about specific activities and on a pro-active basis by periodically reviewing planned occupations. The frequency and level of detail of these periodic reviews will vary depending on particular circumstances. It is suggested that, as a minimum, two levels of formal review are undertaken; monthly and quarterly.

Service Providers must set out their proposed coordination arrangements detailing the frequency and scope of their planned reviews, taking into account the guidance given in this section.

Suggested Regime

The following table summaries the suggested regime undertaken by the Service Provider as part of their coordination responsibilities.

Frequency	Review Window	Typical Scope
Ad-hoc	As required	Undertaken as and when required, usually as a result of the entry of a significant new activity onto the system or after being made aware of an unplanned event or incident. Likely to be undertaken on specific routes or parts of the network.
Weekly	One month	Generally focused on the detailed coordination of routine maintenance activities and smaller scheme works. Usually only considering activities that are wholly within the area (or route).

Frequency	Review Window	Typical Scope
Monthly	Three months	Generally focused on the more significant area schemes and activities promoted by other contractors and third parties. This would be where the main coordination activity is undertaken and is likely to result the most incidences of escalation. The monthly coordination also takes a wider geographic view on activities in adjacent areas (Regional Coordination).
Quarterly	Twelve Months	Longer term planning of works programme paying particular consideration to major schemes and significant area schemes. The quarterly coordination will also focus on performance targets for the forthcoming year.
Annual	Three Years	Longer term planning of major schemes and schemes at feasibility stage. This annual coordination will generally be undertaken in conjunction with other stakeholders and is likely to follow a structured process.

Service Managers and their Service Providers should already have structured meetings in place to address the issues discussed above. Wherever possible, such existing meetings should be used as the basis for the new network occupancy management arrangements and these will be defined in the Network Occupancy Management Plan.

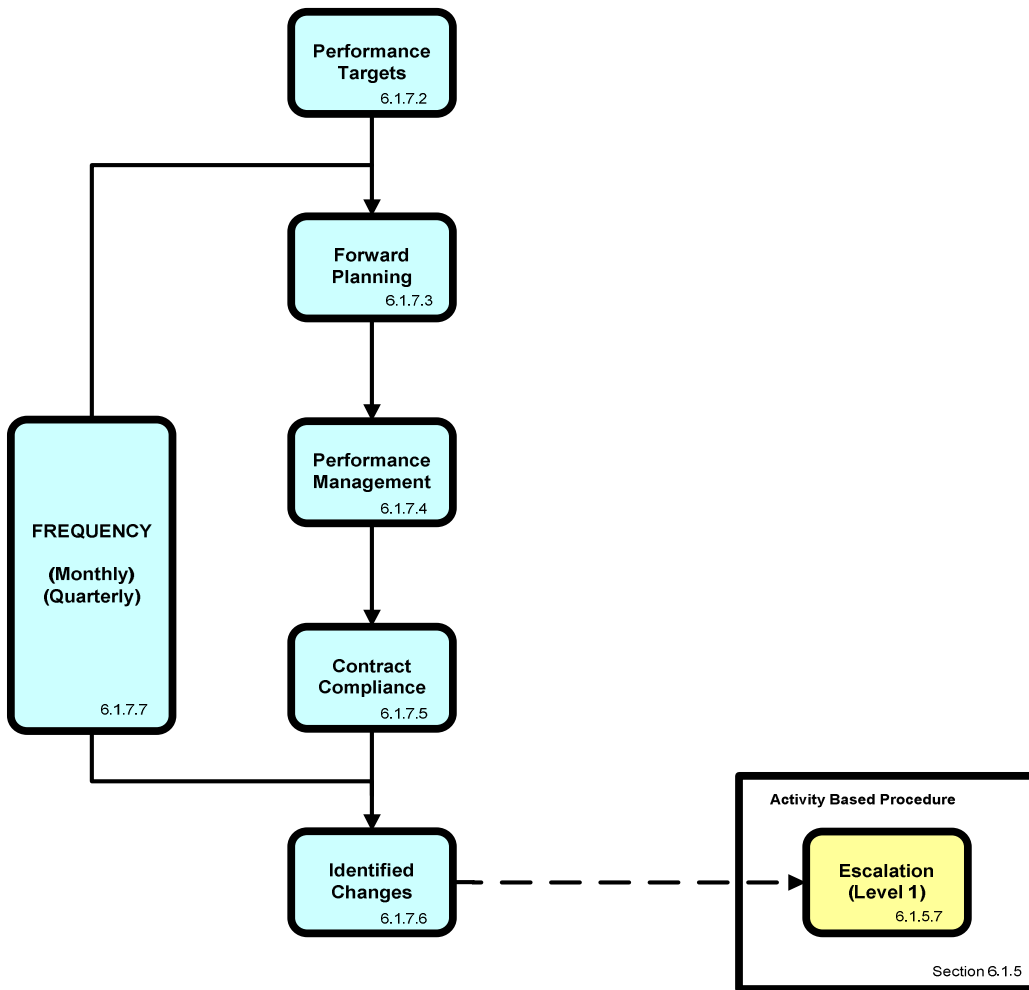
6.1.7 Scrutiny Procedure

6.1.7.1 Introduction

The Scrutiny Procedure is made up of three specific elements. First, Forward Planning which is an assessment of the Service Provider's approach to the forward programming and planning of works activities on the network. Second, Performance Management, which is a retrospective interrogation of the Service Providers performance in respect of the coordination of works activity on the network. Third, Contract Compliance, which is a review of the Service Providers compliance with the contractual obligations in respect of the management of network management occupancy.

Scrutiny is a procedure which is the responsibility of the Service Manager.

The following diagram depicts the elements of the Scrutiny Procedure.



6.1.7.2 Performance Targets

The Performance Targets are as described in Section 6.1.6.2 of this chapter.

6.1.7.3 Forward Planning

Forward Planning is the objective examination, review and approval of the Service Provider’s programme and shall be carried out at regular intervals in advance of the commencement of works activity. This programme shall consist of any activity on the network that may contribute, either directly or indirectly, to congestion on the network.

Activities covered by this examination are categorised in section 6.1.3.3.

Forward Planning is the responsibility of the Service Manager.

6.1.7.4 Performance Management

In future contracts, incentives will be used to secure better management of road space occupancy. In the short to medium term, use of a proactive performance management regime will help ensure performance targets are met. This approach will drive improved performance of both Service Providers and Service Manager.

The two primary performance indicators are detailed in the following table:

PI	Indicator	Target
P1	Average (Mean) monthly total delay over last 12 months	Set locally
P2	Standard Deviation of monthly total delay over last 12 months	Set locally

These primary indicators are focused on the performance of the network and can be reported at national, divisional, regional, area and route level.

These two primary indicators are supported by a set of secondary indicators which provide a broad range of management information, including information on the quality and timeliness of data. These secondary indicators should be considered in conjunction with the primary indicators to assess the overall performance of the Service Provider.

SI	Indicator	Target
S1	Compliance to NOM real-time logging requirements	100%
S2	Predicting accuracy	Set locally

Performance Management is the responsibility of the Service Manager, who will set targets and review their status and progress to meeting them.

The SRW system will provide reporting functions to support this performance reporting.

6.1.7.5 Contract Compliance

The Service Manager's contract management function specifically considers the Service Provider's compliance with their delegated responsibility to undertake the management of network occupancy. The Service Manager will be able to use a number of tools to ensure contract compliance, including auditing. Key Performance Indicators (KPIs) and Key Contract Indicators (KCIs) are already established in various forms within existing contracts and these will co-exist with the new indicators detailed above.

Contract Compliance is the responsibility of the Service Manager.

6.1.7.6 Identified Changes

The scrutiny procedure itself may result in the identification of a need to change occupancy configuration.

The Service Manager is responsible for identifying any potential changes required as a result of the scrutiny procedure. The Service Manager will inform the Service Provider who must initiate the Escalation (Stage 1) element of the Activity Procedure.

6.1.7.7 Frequency

The scrutiny procedure should be undertaken at a pre-defined frequency set down by the Service Manager. This regime should be established taking into account the guidance provided in this chapter.

Suggested Regime

Version	1	Amend.	8	Issue	Jul 09
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The following table summarises the suggested regime undertaken by the Service Manager as part of their scrutiny responsibilities.

Frequency	Typical Scope
Monthly	Examination of the Service Providers quarterly forward programme. Review of the Service Providers previous quarters performance in managing coordination.
Quarterly	Examination of the Service Providers annual forward programme. Review of the Service Providers previous annual performance in managing coordination. Review of the Service Providers contract compliance (including reporting).

It is essential that there is continuity across all the procedures described in this process document. This is best demonstrated by carrying out the Coordination reviews, required in Section 6.1.6, at the same time as the Scrutiny, detailed at Section 6.1.7. The arrangements are detailed in the Network Occupancy Management Plan.

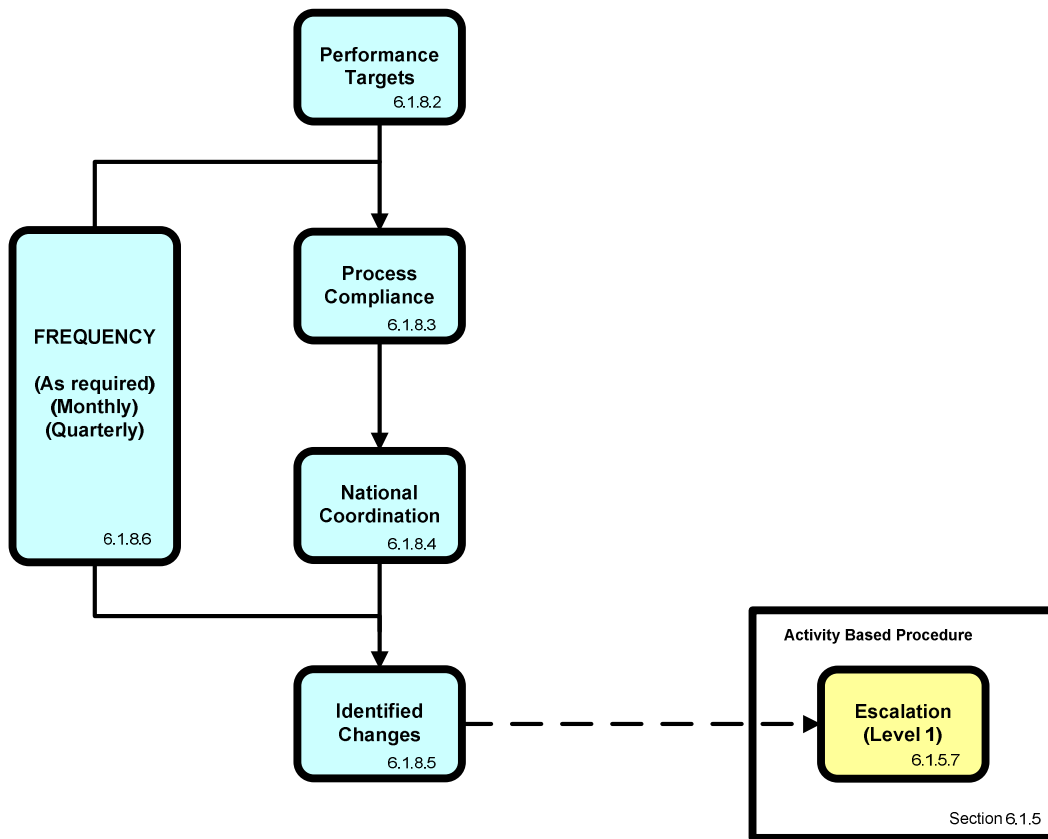
6.1.8 Assurance Procedure

6.1.8.1 Introduction

Assurance is primarily an external and independent view on the work the Service Managers and their Service Providers carried out as part of the Network Occupancy Management process

The Assurance Procedure is the responsibility of the Network Performance Manager and delivered by Network Access Manager within the regional Network Access and Resilience Team.

The following diagram depicts the elements of the Assurance Procedure.



6.1.8.2 Performance Targets

The Performance Targets are as described in Section 6.1.6.2 of this chapter.

6.1.8.3 Process Compliance

The Process Compliance requirement is to ensure that network occupancy management is being undertaken in accordance with the Network Occupancy Management process.

The Process Compliance will focus on the Service Manager's scrutiny process rather than the procedures of his Service Provider.

The Network Access Managers will report, through their NAR Team Leaders, to the Network Performance Managers on a regular basis. The report will specifically address the following:

- i. Implementation of the Network Occupancy Management process.
- ii. Development and application of the Network Occupancy Management Plan.
- iii. Deficiencies and departures from prescribed or agreed arrangements.
- iv. Summary of 'outcome' and other performance indicators.
- v. Summary of identified 'best practice'.

The report will make recommendations to the Network Performance Manager on any potential improvements that can be made to the management of network occupancy and will identify areas of 'best practice' that can be shared nationally.

Process Compliance is the responsibility of the Network Performance Manager.

6.1.8.4 National Coordination

National Coordination provides an overview of all activities that have a potential significant impact on the network at a regional or national level. That is those activities requiring extensive planning beyond adjacent areas or across multiple regions. These will be known as Nationally Significant Activities.

The Network Access Manager, acting on behalf of the Network Performance Manager will facilitate communication between the relevant Service Manager, The Regional Control Centres (RCCs) and the National Traffic Control Centre (NTCC).

The National Coordination role of the Network Access Manager does not remove any of the existing responsibilities from the Service Managers, the Network Operation Managers, the RCC, the NTCC or the Service Providers, but simply provides a strategic overview role. The role is to provide assurance to the Network Performance Manager that everything that can be done to minimise disruption arising from the activities on the network, has been done.

The Network Access Manager will keep a register of Nationally Significant Activities with individual activities normally being identified by the Service Managers (or their Service Providers) or by the Network Access Managers themselves. Network Access Managers will complete a plan for each 'Nationally Significant Activity'. This will provide details of consultations, considerations and actions as a result of liaison with key stakeholders, i.e. RCCs, NTCC, LHAs, emergency services, representative bodies and the media. A template is attached in Annex 6.1.3 which sets out a suggested structure for managing a Nationally Significant Activity.

National Coordination is the responsibility of the Network Performance Manager.

6.1.8.5 Identified Changes

The assurance procedure itself may result in the identification of a need to change occupancy configuration.

The Network Performance Manager is responsible for identifying any potential changes required as a result of the assurance procedure. The Network Performance Manager will inform the Service Provider who must initiate the Escalation (Stage 1) element of the Activity Procedure.

6.1.8.6 Frequency

The Assurance procedure should be undertaken on a pre-defined frequency set down by the Network Performance Manager. This regime should be established taking into account the guidance provided in this section.

Suggested Regime

The following table summaries the suggested regime undertaken by the Network Performance Manager as part of their assurance responsibilities.

Frequency	Typical Scope
As required	National coordination of Nationally Significant Activities as and when identified.
Monthly	Examination of deficiencies and departures from prescribed or agreed arrangements and examination of Network Occupancy Management Plans on a regional basis.

Frequency	Typical Scope
	Production of a compliance audit report and submission to the Network Performance Manager.
Quarterly	Examination of the 'outcome' and other performance indicators and examination of Network Occupancy Management Plans on a regional basis.

6.1.9 Mitigating Delays Arising from Street Works

6.1.9.1 Introduction

The Highways Agency is under a duty to manage its network and to ensure delay arising from all activities is minimised. The Highways Agency imposes on itself a strict regime of occupancy management with road user delay being a key consideration in the planning of its own works. The principles applied to the management of the Highways Agency's own works should be broadly applied to the works of all third parties, including utility companies' street works.

This sub-chapter sets out guidance on the Highways Agency's policy on the general approach to the use of specific powers under section 56 and section 66 of the New Roads & Street Works Act 1991 (NRSWA). It does not however set down any detailed arrangements or define the procedures for use of these powers. The detailed requirements, as defined in the secondary legislation and Codes of Practice (particularly *Co-ordination of street works and works for road purposes*), should always be followed. Further guidance and assistance is available from the Highways Agency's Network Management Policy team within the Safety Standards and Research Directorate. Codes of Practice are available for download on the [DfT web site](#).

6.1.9.2 Coordination and Co-operation – Longer Term Planning

The Highways Agency has a specific duty, under Section 59 of NRSWA, to coordinate works of all types. As part of its network occupancy management arrangements, see 6.1.5.3, 'provisional' bookings are generally made at least one year in advance and 'firm' bookings are generally made at least three months in advance. These timescales have been set so that all activities on the network can be effectively coordinated and any potential disruption to road users can be mitigated.

Statutory Undertakers are required to provide the minimum notice periods as defined in the NRSWA '*Notices, Directions and Registers Regulations*'. These minimum notice periods fall significantly short of the Highways Agency's own requirements for booking road space. Undertakers are not obliged to provide anything more than the legal minimum notice however they should be encouraged to provide longer notice on a 'best endeavours' basis.

Statutory Undertakers have a duty, under section 60 of NRSWA, to co-operate with the street authority and this extends to providing advance information on planned works as detailed in the statutory Code of Practice on coordination. Clearly where an Undertaker has no advance knowledge of his works he cannot be expected to provide information on those works. The statutory Code of Practice, which Undertakers must follow in discharging their duty to co-operate, clearly states that the notice periods should be treated as a minimum. The document states that "*works promoters are encouraged to give longer periods than the basic minimum in order to ensure that all street authorities have the capability to consider all proposed works, their effect upon traffic disruption, as well as any conflict with other street works or road works*".

Service Providers must work to ensure that Statutory Undertakers provide advance information of works in the timescales defined in the network occupancy management arrangements, see 6.1.5.3. Where Statutory Undertakers fail to co-operate they may be committing an offence under section 60 of NRSWA and the Service Provider must provide the Service Manager with the relevant details so that a prosecution may be considered.

Generally the telecommunication companies will not be able to meet this requirement however the water and gas utility companies have significant renewal programmes which they should be able to provide details of in the timescales suggested.

The giving of longer notice should always be actively encouraged but there may be occasions where consideration should be given to allowing an early start of works, particularly where there is a potential benefit to the road user in doing so.

6.1.9.3 Timing of Works – Power to Direct

The Highways Agency has the power, under section 56 of NRSWA, to direct an Undertaker to work at specified times of the day or on specified days. These directions can only be given where works have the potential to cause serious disruption to traffic.

When considering the use of directions under section 56 it is important to test the reasonableness of what is being considered. It would be considered reasonable to direct timings on the basis of the working time restrictions applicable to the Highways Agency's own works so, for example, if works are not allowed during peak hours, say between 06:00hrs and 10:00hrs and between 15:00hrs and 20:00hrs, it would be reasonable to direct an Undertaker not to work during these periods.

Another consideration is the interpretation of the meaning of 'serious disruption'. This term is used in the primary legislation however further guidance has not been provided in either the regulations or the Code of Practice. It is important to consider delay in the motorway and trunk road network in context with the local road network. For example, what might be considered to be a lightly trafficked road within the trunk road network could be one of the busiest roads when considered alongside the rest of the network in that locality.

Service providers must ensure, by the use of directions issued under section 56 of NRSWA, that Statutory Undertakers adhere to Highways Agency's working time restrictions. Where Statutory Undertakers fail to co-operate they may be committing an offence and the Service Provider must provide the Service Manager with the relevant details so that a prosecution may be considered.

Section 56 only relates to the timing of works. If it is considered that a particular traffic management is causing unnecessary delay, and it can be altered to reduce this delay without impacting on the safety of the operatives or the public, a direction under section 66 should be given (see 6.1.9.4 below).

New powers are shortly to become available under section 56(1A) and 56A of NRSWA. The new powers under section 56A will allow the Highways Agency to direct an Undertaker not to place apparatus in the street. The opportunities to use such powers are going to be rather limited however, where a potential use of the direction is identified, the Service Manager should be notified forthwith. The addition of subsection 1A to section 56 extends the power to issue directions to include subsisting works. Clearly there will be circumstances where making such directions would not be appropriate, for example ongoing emergency works. It should however be noted that section 66 could still be applied in these circumstances and therefore appropriate use should be made of this provision.

6.1.9.4 Avoidance of Unnecessary Delay

Statutory Undertakers have a duty, under section 66 of NRSWA, to “ . . . *carry on and complete the works with all such dispatch as is reasonably practicable.*”. Where street works are occupying road space on the trunk road and motorway network it is reasonable to expect that the utility deploys resources to work continuously until their works are completed and the road space is given back to use by the road user.

Service Providers must ensure that Statutory Undertakers are not executing works in such a manner that capacity on the Network is unnecessarily restricted. In particular, traffic management should not be in place unless works are actually being executed. Where a Statutory Undertaker fails to deploy sufficient resources on a job to ensure unnecessary delay is avoided the Service

Provider must issue a notice, under section 66 of NRSWA, requiring the Undertaker to take steps to avoid the delay or obstruction. Where Statutory Undertakers fail to respond to the requirements of a section 66 notice they may be committing an offence and the Service Provider must provide the Service Manager with the relevant details so that a prosecution may be considered.

There may be rare occasions where it is quite legitimate for traffic management to be in place when no works activities are being executed. The two specific examples are where gas needs to be vented from an excavation or a chamber and where materials cannot be trafficked until they have cured.

Where an Undertaker fails to respond to a section 66 notice the Highways Agency is entitled to intervene and take direct action to mitigate the disruption by, for example, backfilling or plating an excavation. In such circumstances all costs are recoverable from the offending utility company.

6.1.9.5 Other general considerations

A balanced and even handed approach should always be taken when dealing with Statutory Undertakers. Wherever possible, agreement should be reached on an informal co-operative basis. Full use of the powers available should however be made where a Statutory Undertaker fails to act in a co-operative manner.

Statutory Undertakers operate under strict regulatory regimes and, as public companies, work in a highly commercial environment. There will, understandably, be significant resistance to any impositions that result in increased costs. As long as the Highways Agency continues to act in a reasonable manner and takes a balanced view on the various considerations the commercial consequences on the utility companies should not be a concern. Under no circumstances should any discussion on compensation be entertained.

The powers under NRSWA discussed in this sub-chapter have been delegated contractually to Service Providers and should therefore be used by them. If however it is necessary, the powers can still be used directly by the Highways Agency. Legal notices should generally be issued by the Service Provider on the Highways Agency's behalf however the Highways Agency should manage any prosecutions that need to be pursued.

It is important to remember that Statutory Undertakers have a right to place their apparatus in the highway and to maintain it (unless of course the street has 'protected' status). Any actions taken in managing street works activities should be discharged in a reasonable manner and under no circumstances should a utility company be obstructed in carrying out its obligation to place and maintain its infrastructure.

6.1.9.6 Offences and Prosecutions

Where a Statutory Undertaker is considered to have committed an offence the Highways Agency may take forward a prosecution.

In managing street works activities, and particularly when using the powers available under section 56 and section 66 of NRSWA, Service Providers must work on the assumption that there is the potential need for a prosecution to be pursued. Service Providers must therefore ensure that legal procedures are followed rigorously and that evidence is collected at every stage in order to support a successful prosecution.

Further guidance on prosecutions will be made available to all Service Providers and Service Managers

6.2 Scheduled Road works (SRW)

6.2.1 Introduction to SRW

SRW is a system for the improved management of information about lane closures on the motorway and all-purpose trunk road network. SRW improves the accuracy, quality and currency of road closure information in order to help ensure that the Highways Agency Information Line (HAIL), the Highways Agency website, the Highways Agency Traffic Officer Services, the Highways Agency Regional Control Centres (RCC) and the National Traffic Control Centre (NTCC) meet customer requirements as well as providing a resource for network occupancy management.

Service Providers must enter the data directly into SRW and they and their colleagues in the Highways Agency are then able to report on the data loaded. In the case of Highways Agency staff, access is provided to all data in the system, whilst Service Provider staff will be restricted to information pertinent to their Areas. A principle of SRW is that only the Service Provider's can enter or amend data in SRW.

The information is used to compile network availability statistics for comparison with the Road Users' Charter targets and other KPI. Information from SRW is passed on to the Highways Agency public website regularly. It is therefore important that Service Providers endeavour to ensure that all information held in SRW is as accurate, complete and up to date as possible.

6.2.2 Accessing SRW

SRW, a module of HAPMS, is essentially a database of lane closure information held on a server at the Highways Agency. Service Provider users can access the database by logging into HAPMS in the usual way.

Service Providers must access HAPMS via their Highways Agency Extranet or ISDN connections. For information about using the Highways Agency connection Service Providers should, in the first instance, contact their own internal IT departments. Any requests for help in using SRW, including requests for training of new users, should be directed to the Highways Agency ServiceDirect helpdesk Telephone: 0113-2541140; E-mail: ServiceDirect@highways.gsi.gov.uk

6.2.3 What information to store in SRW

With the development of the Traffic Manager role within the Highways Agency, in accordance with the Traffic Management Act, the Highways Agency requires input of all closures - planned or unplanned, irrespective of the expected impact, is expected.

The classification of closures must be as defined below:

Severe	Estimated delay of over 30 minutes per vehicle at peak times
Moderate	Estimated delay of between 10 and 30 minutes per vehicle at peak times
Slight	Estimated delay of less than 10 minutes per vehicle at peak times
No Delay	Closures that are expected to cause no delay to road users

It is recognised that the effect of different closures will have a different impact on the travelling public and therefore Service Providers must provide information that is appropriate to the severity of the impact of the closure. Detailed Closure Record must be used to record required information when:

- Number of lanes closed/opened varies within different components (e.g. contraflows)
- Number of lanes closed/opened varies within the length of the closure
- Rolling/Mobile closures

- Layout varies over time – unless any lane closure is for only part of each day (e.g. overnight) and the period over which it is in place matches the standard HAPMS definition of peak, off-peak and/or night.

Summary Closure Records may be used in other cases.

All other closures may be entered using the 'Summary SRW closure entry route'. This applies to all planned and unplanned lane closures. Records must also be provided for off Network events that are considered to impact on traffic using the Highways Agency's Network.

The SRW user guide indicates the approved approach to the population of SRW records. The user guide is available on the HAPMS on-line documentation pages ([//bms.partnernet.highways.gov.uk/hapms](http://bms.partnernet.highways.gov.uk/hapms)) or on request from the HAPMS Support Team via ServiceDirect (as indicated above).

6.2.3.1 Terms of Reference

The term “**planned lane closure**” is used herein to refer to traffic management modifying the normal flow of traffic in relation to works planned by the Service Provider to undertake their normal activities on the Network. These include all items of routine and non-routine maintenance, refurbishment and construction but does not relate to works being performed to rectify damage to infrastructure as the result of an incident although some more extensive repairs may be the subject of programmed activities

The term “**incident lane closure**” is used herein to refer to unplanned lane closures directly resulting from an incident on the Network. Incidents normally involve road traffic collisions, disabled, damaged or abandoned vehicles, obstructions in the carriageway, or significant unplanned roadside events that are causing disruption to the normal flow of traffic. Incident recovery is managed by the Service Provider, or by the Highways Agency's Traffic Officer Service (e.g. RCCs) or by the Police or Local Highway Authority with or without the support of the Service Provider. The duration of the incident is considered to be from the time of the incident itself until the time at which the site is vacated by all personnel from the emergency services, vehicle recovery agents, Highways Agency or the Service Provider.

The term “**emergency lane closure**” is used herein to refer to lane closures put in place by the Service Provider to make safe or make repairs to damage resulting from an incident on the Network. Emergency lane closures may run continuously from the end time of an incident (for example, if lanes have remained closed from safety reason after the departure of all personnel) or may occur at a discrete period some time after the end time of an incident (for example, the Service Provider plans later lane closures to make repairs to infrastructure).

6.2.4 Information Exchange with the National Traffic Control Centre & the Regional Control Centre

The key requirements for information provision to NTCC and the appropriate RCC (in charge of the Highways Agency Network in the area of the road works) are outlined below. The information must be accurate which will require actual times being recorded.

6.2.4.1 Planned lane closure information

The Service Provider must enter accurate, complete and up-to-date lane closure data into the Highways Agency's Scheduled Road works System (SRW). Note that the NTCC and RCC operate on a 24/7 basis and “up-to-date” information in this context means that the Service Provider must

enter all new or changed data into SRW system as soon as is practicable and in any case within 24 hours of any required input or known change.

6.2.4.2 Real-time lane closure updates (planned and emergency lane closures)

This refers to the estimated completion time of lane closures anticipated to finish ahead of or behind the previously scheduled time. This information must be provided to NTCC and relevant RCC in “real-time” as soon as the Service Provider is aware of a likely change using means as agreed within the working arrangements. In any case, for overrunning works this notification must occur prior to the originally scheduled completion time; for early-completion this must occur prior to the new expected completion time.

The Service Provider must provide this information according to the following criteria, which have been developed to minimise unnecessary workload on the Service Provider:

Time of Day	Notifications required	
06:00 hrs to 19:00 hrs	if there is any change of more than 15 minutes to the notified plans for either commencement or removal of traffic management	
19:00 hrs to 00:00 hrs	when removal of planned traffic management is delayed by more than 30 minutes from the time notified	
00:00 hrs to 06:00 hrs	when traffic management due for removal after 06:00 hrs is delayed by more than 15 minutes from the time notified	
24 hours	when lane closures have been booked but this closure booking will not be used.	

For overnight works the provision of this information will require “out-of-hours” communication from the Service Provider to NTCC and relevant RCC. The means by which this is done, and the personnel involved, will be agreed between NTCC, the relevant RCC, the Service Provider and the Area Performance Team representative.

NTCC and the relevant RCC may also need to confirm details of real-time updates where, for example, the information provided is unclear. In such cases the Service Provider must provide contact name(s) and telephone number(s) of whomever who can supply such updates. NTCC will also provide details of NTCC and RCC personnel in the event that the Service Provider needs to initiate discussion.

6.2.4.3 Incident Lane Closures

Where the Service Provider is required to provide lane closure and other traffic management or other services directly, or in assisting the emergency services in the management of an incident, and/or the undertaking of work to render the road safe for further use, the Service Provider must notify the National Incident Liaison Officer (NILO) in accordance with existing incident reporting procedures. NTCC and appropriate RCC will be informed of incidents by the NILOs.

6.2.4.4 Emergency Lane Closures

Where the Service Provider is required to provide traffic management to undertake unscheduled emergency works, the Service Provider must notify the NTCC and the RCC by means agreed in the working arrangements.

6.2.4.5 Other real-time events

The Service Provider must supply details of anticipated or actual consequences of severe weather affecting lane availability or vehicle speeds (e.g. flooding, winter weather) and any other events that can reasonably be expected to affect any part of the Network managed by the Service Provider.
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6.2.4.6 Records of actual lane closures

To ensure accurate record keeping the Service Provider must create or update records within SRW reflecting the actual times, lanes closed and location etc for all lane closures within 72 hours of their removal from the road.

6.3 Temporary Traffic Signs - Special Events

6.3.1 Introduction

This refers to granting permission for the Automobile Association, and others to erect temporary signs on the Network to notify of special events.

6.3.2 Policy

Current policy is set out in the Department of Transport Network Management Advisory Leaflet entitled "Provision of Temporary Traffic Signs to Special Events", dated May 1993 (revised 2008). Interpretation of Note 2 on page 5 of this document is that, in the case of motorways, agreed temporary signs must be erected by the Service Provider. On other trunk roads, however, there is no reason to prevent other reputable organisations from carrying out the work providing they comply with the requirements in the leaflet.

A code of practice for the erection of temporary traffic signs to special events is included in Annex 6.3.1.

6.4 Decriminalised Parking

6.4.1 Introduction

Under Section 43 of, and Schedule 3 to, the Road Traffic Act 1991 Local Authorities are empowered to ask the Secretary of State to make Orders that create areas within which the enforcement of non-endorsable on-street parking offences may be decriminalised. These are called Permitted Parking Areas or Special Parking Areas. In them police enforcement is replaced by parking attendants who raise penalty charges which are civil debts, recoverable by the Local Authority.

These proposals may apply to all purpose trunk roads. They do not apply to Clearways, Red Routes or Motorways where breaches of the parking restrictions remain criminal offences. The Highways Agency has no powers to initiate such proposals.

6.4.2 Policy

The procedures require Local Authorities to consult the Highways Agency. Should Highways Agency Area Performance Teams become aware of any consideration being given to any such proposals they should refer to Department of Transport Circular 1/95 entitled "Guidance On Decriminalised Parking Enforcement Outside London" which is published by The Stationery Office and may also be downloaded from the Department for Transport's website. Experience to date suggests that this is not a pressing issue at the moment and that a single copy of the Circular held in the Service Provider's library will be sufficient.

6.5 Abnormal Load Routeing and Management**6.5.1 General**

6.5.1.1 The routeing of Abnormal Indivisible Loads on the Network is managed by the Highways Agency's Abnormal Indivisible Loads (AIL) Team. Abnormal Indivisible Loads are those which cannot, without undue expense or damage, be divided into two or more loads for the purpose of carriage on the Network. The movement of these loads is governed by Regulations, including the Road Traffic Act 1988, and DMRB standards BD86 and BD21. Guidance, and instruction, on the AIL Special Order Process Improvements was provided to Service Providers by AMM 106/08. Associated policy mandated by that document is included in this chapter, see 6.5.1.1 and accompanying Annexes.

6.5.1.2 BD86 gives guidance for the determination for Vehicle Ratings and Reserve Factors for highway bridges and structures that indicate the load carrying capacity of structures to support Special Type General Order (STGO) and Special Order (SO) vehicles. BD86 is used in conjunction with BD21 which refers to the Authorised Weight (AW) Regulations, and should be utilised for the routeing of abnormal or indivisible loads on the Network.

6.5.1.3 The categorisation of road vehicles is included in BD86 but they have been reproduced here for ease of reference:

(a) Vehicles complying with The Road Vehicles Construction and Use (C&U) Regulations and Authorised Weight (AW) Regulations.

This group includes cars, light good vehicles, and rigid and articulated heavy goods vehicles up to a gross weight of 44 tonnes. These vehicles are covered by the C&U and AW Regulations and are not subject to permit and notification requirements. The effects of these vehicles are assessed in accordance with BD21.

(b) Vehicles complying with The Road Vehicles (Authorisation of Special Types) General Order (STGO Regulations).

This group includes vehicles that do not comply with the AW Regulations such as those used for the carrying or drawing of abnormal indivisible loads. Notifications of movements of these vehicles are required in accordance with STGO Regulations.

(c) Special Order (SO) Regulations.

This group includes vehicles that do not comply with the AW or STGO Regulations and is covered by Section 44 of the 1988 Road Traffic Act.

6.5.2 Abnormal Indivisible Load Special Order Process

6.5.2.1 There are three stages to the process as follows:

- Stage 1: SO Consultation Stage – BE 16 Application Approval
- Stage 2: 5 Day Notification Stage
- Stage 3: SO 60 Minute Notification Stage

Process flow charts detailing the roles each of the stakeholders, including Service Providers, discharges for Stage 1 to 3 are included at Annex 6.5.1 to 6.5.3 respectively.

6.5.2.2 The roles of the Service Provider, which he must assume and discharge, are further explained in paragraphs 6.5.2.3, 6.5.2.4 and 6.5.2.5.

6.5.2.3 Stage 1: SO Consultation Stage – BE 16 Application Approval:

Process Stage	Role	Responsibility	Timescale
Stage 1: SO Consultation Stage BE 16 Application Approval	To receive provisional SO route information from AIL Team via electronic AIL postbox.	Service Provider must have a predetermined electronic AIL postbox in operation to allow the receipt and passing of SO information to the AIL Team.	6 weeks
	To assess provisional load against structural capacity along the proposed SO route.	Service Provider must undertake structural capacity assessment along the proposed SO route in accordance with BD86 or as otherwise agreed with the Highways Agency Technical Approval Authority (TAA).	
	To provide the AIL Team with comments on any potential road space booking or network occupancy conflicts.	Service Provider must assess the provisional SO route and timeframe using Scheduled Roadworks (SRW) as well as any other available source of network information.	
	To return all comments following structural assessment and occupancy checks to the AIL Team.	Structural assessments and occupancy checks must be completed by the Service Provider within timescales prescribed by the AIL Team. All comments must be returned (including nil returns) to the AIL Team by e-mail.	
	Identify any need for detailed structural assessment or Technical Approvals	Service Provider must: Inform the AIL Team of the requirement for additional technical approval at the soonest opportunity; provide information as to type of assessment or approval required as well as approximate timescale implications, and; administer detailed assessments or Technical Approvals on behalf of the haulier in accordance with existing procedures.	Up to 10 weeks*
	Provide any further assistance or information as requested by AIL Team	Service Provider must respond to requests as soon as reasonably practicable and must provide any assistance according to AIL Team request	Task dependant
	Take receipt and file all approved SO permit and route information	Service Provider must receive SO permit and route information via electronic AIL postbox and must file all information in accordance with existing procedures to facilitate future reference.	2 days*

* timescales will vary

6.5.2.4 Stage 2: 5 Day Notification Stage

Process Stage	Role	Responsibility
5 Day Notification Stage	Should a Service Provider receive a 5 Day Notification Stage directly from a haulier they are to advise the National Traffic Control Centre (NTCC) at their soonest possible opportunity	The Service Providers must provide the NTCC with all haulier 5 Day Notification information.
	To receive 5 Day Notifications from NTCC via electronic AIL postbox.	Service Provider must have a predetermined electronic AIL postbox in operation to allow the receipt and passing of SO information to the NTCC.
	To review current structural capacity along the approved SO route	Service Provider must undertake structural capacity review along the approved SO route. Load capacity assessments of structures for proposed SO vehicle movements, other than those using ESDAL screening, must be subject to Technical Approval procedures in accordance with BD2.
	To return all comments following structural assessment to the NTCC.	Service Provider must complete structural assessments checks within timescales prescribed by the NTCC and must return all relevant comments (including nil returns) to the NTCC by e-mail
	To provide the NTCC with comments on any road space booking or network occupancy conflicts	Service Provider must review the approved SO route and timing against current Scheduled Roadworks (SRW) entries as well as any other available source of network information. The Service Provider must also complete road space occupancy checks within timescales prescribed by the NTCC and must return all relevant comments (including nil returns) to the NTCC by e-mail. This role and responsibility will reside with the Service Provider until such time that they are advised by the Service Manager that a formal handover to the RCC has been agreed
	To create an SO movement related Event (X) entry in SRW	Service Provider must include all relevant SO movement details to SRW . The HA SO permit number must be entered into a SRW field that can be viewed by the NTCC for referencing purposes. Any ongoing management and update of SO SRW entries must be done in accordance to existing procedures.
	Provide any further assistance or information as requested by the Area Performance Team (APT).	Service Provider must respond to requests as soon as reasonably practicable and must provide any assistance according to Service Manager requests.

6.5.2.5 Stage 3: 60 Minute Notification Stage

Process Stage	Role	Responsibility
60 Minute Notification Stage	Provide any further assistance or information as requested by the Regional Control Centre (RCC).	Service Provider's Network Control Centre (NCC) (or equivalent) must respond to requests as soon as reasonably practicable and must provide any assistance according to RCC requests.

6.5.3 Detailed Structural Assessments and Technical Approval

6.5.3.1 The effects of STGO vehicles must be assessed in accordance with BD86.

6.5.3.2 For SO Vehicle Movements the following requirements apply unless expressly stated otherwise in the Service Provider's contract:

- (i) Load capacity assessments of structures for proposed vehicle movements, other than those using ESDAL screening, must be subject to Technical Approval procedures in accordance with BD2.
- (ii) The Service Provider must provide an estimate of the costs of assessment of structures for route clearance to the Service Manager.
- (iii) The estimate of cost of assessments of structures will be forwarded by the Service Manager to the haulier applying for a route for a SO vehicle movement. A suitable letter template is included at Appendix 6.5.2. The Service Manager will advise the Service Provider to undertake the assessments once confirmation has been received by the Service Provider that costs will be met by the movement route applicant.
- (iv) The haulier will be given a copy of the Assessment certificates for Load Assessments for which he has paid.
- (v) On completion of appraisal of the route for a proposed SO Vehicle movement the Service Provider must notify the AIL Team of the suitability of the route using the form at Appendix 6.5.1 of this manual.

6.5.4 Electronic Service Delivery for Abnormal Loads

6.5.4.1 The ESDAL website is designed to help haulage companies plan their journeys when moving abnormal loads. The website has been developed for the Highways Agency by Serco Integrated Transport and is designed for all parties involved in moving abnormal loads.

6.5.4.2 Phase 1 of ESDAL offers an on-line mapping system to plan their route, and will automatically generate an up-to-date list of the authorities they need to contact. These easily identifiable contacts will ensure more accurate notifications, safer movements and help to simplify the current system. A further three phases will be introduced to the website in due course. These will streamline the process for the police and relevant authorities who ensure that the proposed route is suitable, taking account of the impact on traffic and bridges to be used, to manage notifications.

6.5.4.3 The planning service is free and those who wish to find out more about ESDAL, or register their details online, should visit the website: www.esdal.com

Appendix 6.5.1

SPECIAL ORDER MOVEMENTS

Notification of suitability of route with respect to the load capacity of structures.

HA reference:

Maintenance Area:

Movement reference/name:

Description of route in Area:

Description of Vehicle Train considered: *[may be attached as a separate sheet – this would include wheel layout of the vehicle train, gross weights of vehicle and tractors, tyre contact areas, wheel and axle weights, etc]*

Results of Assessment: *[list all structures affected by the route]*

Structure Name	Structure Number	Pass/Fail	Comments
			[Include date of assessment, note of critical elements, any cautions/conditions that apply. These might include vehicle speed, coincident loads, position of vehicle on carriageway etc]

I confirm that the above assessments have been carried out in accordance with HA procedures including those for Technical Approval.

The vehicle may pass* / not pass* over this route subject to any conditions in the comments for each structure *[* delete as appropriate]* and subject to the general cautions and conditions given below:

[List all comments / cautions / conditions that apply generally to the proposed route]

Signature:

Bridge Manager

Name:

Date:

Service Provider:

NOTES

- 1 This form is to be completed by Service Provider.
- 2 The above results only apply to the movement being considered based on the assessment standards and the condition of the structure at the time this movement request was considered and other conditions noted against each structure. No assumptions shall be

made regarding any similar movements along this route, which will each require a further application for agreement.

- 3 This form shall be faxed and posted to the Regional HA Abnormal Indivisible Loads Administrator/Network Access and Resilience Team for the Area concerned.
- 4 The Highways Agency's Abnormal Indivisible Loads Administrator shall attach this form to the Weight Certificate required by HA internal procedures before submitting it to the Service Manager for signature.
- 5 The Bridge Manager is the person named in the Service Provider's QA procedures as responsible the management of all structures within the Network

Appendix 6.5.2**Standard text of letter to be sent to Movement route applicant by the Highways Agency**

Dear Sir,

[Insert here the unique name by which the abnormal load movement is known]

STRUCTURAL ASSESSMENT COSTS FOR AREA [Insert HA Area Number or DBFO details]

Set out below the terms on which the Highways Agency are prepared to instruct *[Name of Service Provider]* to carry out the bridge assessments described in the Schedule attached hereto associated with the Special Order movement referred to above.

1. *[Name of Company (the Movement route applicant)]* will pay all costs, howsoever arising, incurred by *[Name of the Maintenance Service Provider]* on behalf of the Highways Agency in connection with the carrying out the bridge assessments including administrative and professional costs and any value added tax. *[Name of Company (Movement route applicant)]* will on accepting the terms of this letter pay an estimate of the costs in the sum of £[.....] to the Highways Agency within 14 days of the date of this letter.
2. On completion of the assessments *[Name of the Maintenance Service Provider]* will certify the costs incurred and, if the sum certified exceeds £ ----.-- *[Name of Company (Movement route applicant)]* will pay the Highways Agency the difference within 14 days of the date of the certificate, but if the sum certified is less than £ ----.-- the Highways Agency will refund the difference to *[Name of the Company (Movement route applicant)]* within that period.
3. The certificate of costs provided in accordance with paragraph 2 above shall be final, unless an error by the Maintenance Service Provider is shown to have been made.

I shall be grateful if you would indicate *[your company's or the Company's]* acceptance of the foregoing terms by signing and returning to me the enclosed copy of this letter with the attached schedule and plan / drawing.

Yours faithfully

[Name of Company (Movement route applicant)] hereby accepts the terms and conditions set out in the above letter and requests the *[Name of the Maintenance Service Provider]* acting on behalf of the Highways Agency to carry out the assessments.

Signed

Director

Date

Schedule

The assessments comprise *[List the assessments to be undertaken by the Service Provider]*

1.....

2.....

3.....

6.6 Co-ordination of Design and Works

6.6.1 Introduction

The purpose of this chapter is to set out how co-ordination of motorway widening and essential carriageway and bridgeworks can be achieved effectively and efficiently. It sets out the responsibilities of the widening consultant/designer, the Highways Agency's Service Provider and the Highways Agency. Whilst the guidance given is intended to be normally applicable, there may be exceptional circumstances which dictate that a different approach is necessary. Such cases should be referred to Highways Agency for approval.

6.6.2 General Approach

The objective should be to ensure that, where the opportunity exists, maintenance works should be combined with motorway widening in order to minimise the impact on road users. Congestion at road works involves very large delay costs and can result in considerable frustration for drivers. Therefore, as soon as possible in the preparation of a widening scheme, Highways Agency will determine the maintenance works to be included in widening contracts. The intention should be to avoid undertaking major capital maintenance works which would cause significant traffic disruption or abortive work in advance of a widening contract involving works on the existing carriageway/structures. Furthermore, the design of a widening scheme incorporating existing carriageways/structures should be normally sufficient to ensure that there is no necessity to carry out maintenance works any sooner than normal maintenance cycles would suggest following completion of the widening works.

The consultant/designer and Highways Agency will be responsible for implementing these combined widening and maintenance contracts.

There should not be many exceptions to this approach. Such exceptions may occur where unexpected rapid deterioration of the carriageway or a structure leads to the need for immediate work to avoid unacceptable risks to the safety of the public. Such exceptions may also occur where the requirement to accommodate 40T lorries before 1999 dictates that bridges must be strengthened in advance of widening.

The consultant/designer will be responsible for the design of the maintenance works on the carriageways and structures on the section of motorway covered by his commission. This should include any upgrading or steady state maintenance as defined in Part 4, of those structures which will not be demolished or substantially altered.

Throughout the duration of the widening commission there will be an ongoing need for liaison and the exchange of information between the consultant/designer, Service Provider and Highways Agency. Regular formal co-ordination meetings may be the most effective method of ensuring such liaison. Subject to the agreement of Highways Agency, the Service Provider may be requested to advise the consultant/designer on maintenance options and treatments but such advice, if accepted, will not relieve the consultant/designer of his responsibilities for the permanent works. The Service Providers costs in providing this advice will be reimbursed.

6.6.3 Prior to Appointment of Consultant/Designer

In drawing up programmes of maintenance work, Highways Agency will take account of any motorway widening schemes for which a consultant/designer has not been appointed. Even at this early stage, the aim will be to co-ordinate widening with maintenance, as far as this is practicable given the uncertainty over the proposals and programme for the widening.

Highways Agency will ensure that the brief for the widening commission covers the collection of maintenance data and any maintenance activities likely to be required by the consultant/designer.

6.6.4 On Appointment of Consultant/Designer

Highways Agency will notify the Service Provider in writing of the award of the commission, the name of the consultant/designer, the Project Manager (PM) and that of the Highways Agency's PM.

One of the consultant/designer's first tasks after having been awarded a widening commission is to identify, and to carry out a preliminary appraisal of widening options. To enable realistic maintenance costs to be included in economic assessments, the consultant/designer will need to form a broad view of future maintenance requirements. To enable the consultant/designer to do this, the Service Provider should provide within eight weeks of a request by the consultant/designer a short report, via Highways Agency, on the general condition of the carriageways and structures. A guide to the content of the report is included at Annex 6.6.1. The Service Provider's costs in supplying this information will be reimbursed.

6.6.5 Scheme Appraisal and Design

Throughout the preparation period for a widening scheme the Service Provider should continue to carry out all routine maintenance including routine technical surveys and bridge inspections. Drainage systems should be proved where this has not already been done. The data from the surveys should be provided by the Service Provider to the consultant/designer on request to enable the consultant/designer to refine or modify his appraisals as necessary. For providing this information to the consultant/designer only the Service Provider's costs which are not part of his normal duties under his Contract with the Highways Agency will be reimbursed.

If the consultant/designer wishes to carry out detailed surveys, inspections and tests of his own, he should inform Highways Agency and the Service Provider of his intention to ensure that no party duplicates the work of the other. If the consultant/designer's requirements could most effectively be carried out by the Service Provider (e.g. an additional deflectograph survey) and the Service Provider is able to accommodate the requirement within his own survey/inspection programme, then appropriate arrangements should be made through Highways Agency. The Service Provider's costs in carrying out this work when not part of his normal duties under his Contract with the Highways Agency will be reimbursed. If the consultant/designer's requirements cannot be accommodated by the Service Provider or if the surveys are of a specialist nature and beyond the Service Provider's capabilities, then a specialist testing consultant or contractor should be employed and the costs will be reimbursed. In both cases, the results of the surveys, inspections and tests should be exchanged between the Service Provider and consultant/designer, if required.

If the consultant/designer proposes to undertake his own surveys, inspections and tests, he should inform Highways Agency and the Service Provider, to enable the Service Provider to comment on the proposals, methods of working and reinstatement. The consultant/designer will be responsible for ensuring that the work is undertaken in a safe manner and that the integrity of the carriageways and structures is not compromised. The consultant/designer should be informed before the works commence that if, in the opinion of the Service Provider, the works or any consequential reinstatement present an immediate danger to the public or the workforce the Service Provider will notify the consultant/designer and if no immediate action is taken the Service Provider will enter the site and execute any works necessary to remove the danger and make the site safe. If the Service Provider is dissatisfied with the conduct of the works but there is no immediate danger to the public or workforce, he should notify the consultant/designer (copy to Highways Agency) so that appropriate action can be taken. The consultant/designer should supervise any reinstatement required to the satisfaction of the Service Provider and formally hand over to the Service Provider.

6.6.6 Arrangements for Major Widening and Maintenance Contracts

Once the maintenance works to be included in the widening contract are known, Highways Agency

will formally seek the agreement of the Service Provider to the temporary withdrawal of responsibilities for the design and supervision of those works. A model letter for this purpose is at Annex 6.6.2. This letter should be sent in sufficient time to serve notice in the event of a disagreement.

The consultant/designer should ensure that the design of the permanent works takes account of the need for future maintenance and that any easements required for maintenance purposes are included in the Compulsory Purchase Order.

Where appropriate, the consultant/designer should discuss with Highways Agency and the Service Provider the effect of his proposals on the motorway maintenance compounds and the arrangements for winter maintenance. The objective should be to ensure that an efficient maintenance operational capability is maintained at all times. Where a compound needs to be extended or resited because of a widening scheme, this should be completed as an advance contract or substitute facilities provided before the effectiveness of the existing facility is impaired.

The consultant/designer should liaise with the Service Provider over the location referencing of that section of motorway affected by the widening scheme. This will enable the consultant/designer to produce, at the time of tender invitation, the drawings and schedules defining the Network as required by Part 6.

Prior to the preparation of the contract documents, Highways Agency will decide the respective responsibilities of the Contractor and the Service Provider during the contract, to enable appropriate clauses to be included in the widening contract documents. The Contractor should normally be responsible for routine maintenance within the site area and the Service Provider should be responsible for winter and electrical maintenance. The site area will need to be very carefully defined (e.g. from marker post to marker post, or from start of the traffic management taper to the 'End' sign), and reference made to the Contractor's duties for routine maintenance requiring him in this respect to fully comply with the relevant Codes of Practice.

6.6.7 Assessment and Strengthening of Structures

The 15 year bridge rehabilitation programme requires inter alia trunk road structures to be assessed and, if found to be necessary, strengthened before 1999.

Service Provider's are generally responsible for implementing the programme, except that the consultant/designer should be responsible for structures in motorway widening schemes which can be strengthened before 1999. In these circumstances the consultant/designer should assess and where necessary design strengthening for structures to be retained in his final scheme. The consultant/designer should comply with full technical approval and Highways Agency certification and reporting procedures in accordance with BD2 and DMRB Vol. 3 Section 4.

The consultant/designer must also provide Highways Agency with a copy of all appropriate assessment documentation. Highways Agency and the Service Provider should be informed of the consultant/designer's assessment programme as early as possible. This will ensure, not only that duplication does not occur but also that Highways Agency and the Service Provider are in a position to respond quickly and effectively if urgent measures are found to be necessary. In the report on the condition of the carriageway and structures, the Service Provider will have identified those structures already assessed in accordance with Part 4 and provided a copy to the consultant/designer of the results of the assessment and an outline of any strengthening works undertaken or proposed.

All structures not appraised by the consultant/designer should be assessed normally by the Service Provider, except where it is known that a structure will be demolished or substantially altered before 1999. The Service Provider should also be responsible for any interim measures which may be

necessary and all strengthening works except those which Highways Agency has notified will be incorporated into a widening scheme and completed before 1999. If such incorporation is planned, but the widening scheme is subject to slippage so that the strengthening of the structure would not be completed before 1999, Highways Agency will need to determine the most appropriate course of action in the circumstances. Options include passing responsibility back to the Service Provider, carrying out the strengthening as an advance contract to the widening scheme or the imposition of a temporary weight restriction.

6.6.8 During the Contract

On receipt of the programme from the contractor Highways Agency will notify the Service Provider of the timescale for the works and keep them informed of dates of closures and restrictions.

During the contract responsibility for any routine inspections, and all routine maintenance within the site area, shall pass to the Contractor who will be required to comply fully with the Routine & Winter Service Code and this Manual. This work will be specifically identified and included in the tender documents. Whilst the Highways Agency will remain legally responsible for the condition of the highway, and therefore for dealing with third party claims, compensation for breach of contract may be obtainable from the Contractor if he has failed to carry out adequately his routine maintenance responsibilities.

As part of his routine maintenance functions, the Contractor will be responsible for dealing with accidents and incidents within the site area, including the clearance of debris in co-operation with the police as required. In some cases, the Project Manager, after consulting the Contractor, consider it appropriate to call upon the Service Provider to assist with specialist operations. The Service Provider will be reimbursed for such assistance.

In addition to assuming the highway maintenance responsibilities described in the Routine and Winter Service Code, the Contractor will be required to keep the trafficked carriageways, throughout the length of the site, clear of debris, from whatever cause, as far as this is reasonably and safely possible. This requirement should be detailed in Appendix 1/17 of the Specification for Highways Works, using the following wording at section (ii) "Highways" under the heading "Maintenance Requirements".

"Until the issue of the Certificate of Completion, the Contractor shall be responsible for the maintenance in all respects (except of lighting columns, associated cabling and other electrical installations) of all lengths of highway within the limits of the Site in accordance with the Highways Agency's Routine and Winter Service Code. In addition to these requirements, the Project Manager will require the Contractor to inspect the trafficked carriageways and central reservation throughout the length of the Site at least once every hours and remove all debris however arising, either at the time of inspection or as soon thereafter as it is safe to do so having due regard both to the protection of workforce and of the travelling public from unreasonable danger. The Contractor will not assume responsibility for winter maintenance throughout the length of the Site".

Responsibility for electrical and winter maintenance throughout the contract period should remain with the appropriate Service Provider. Where appropriate, and before the onset of severe winter weather, the Service Provider should liaise directly with the Contractor in order to agree areas of the site into which snow may be ploughed or blown, if necessary. Such agreements should be reviewed as necessary in the light of progress with the work on site. In the event of a failure to reach agreement, the Service Provider should immediately inform Highways Agency who will need to determine the most appropriate course of action in the circumstances bearing in mind that effective winter maintenance must be carried out.

The Contractor shall allow reasonable access for specialist electrical contractors and others who require to attend to equipment not included in the main contract.

Prior to sectional completion Highways Agency will arrange a handover meeting and inspection of the works with the Service Provider.

6.7 NRSWA - Recovery of Inspection Fees from Statutory Undertakers**6.7.1 Introduction**

Under Section 72 of the New Roads and Street Works Act 1991 a Highway Authority is empowered to carry out investigatory works to check on whether or not an Undertaker has complied with the duties placed on it in respect of reinstatement of the street. If the reinstatement is found to be substandard, Section 72 makes provision for inspection of the remedial works at three stages, at the Undertaker's expense. Under Section 75 an undertaker executing street works is required to pay the Highway Authority a prescribed fee in respect of each sample inspection of works carried out by the authority. The fees under Section 75 do not apply to investigatory works under Section 72.

Full details can be found in "Code of Practice for Inspections" published by The Stationery Office.

It is essential for Area Performance Teams and Service Providers to have a copy of the Code of Practice (ACoP) and familiarise themselves with the contents. Further advice for the Inspection of Statutory Undertaker's Works is provided in Annex 6.7.1 and includes advice on undertaking sample, routine, investigatory, defect and inadequacy inspections, and the collection of fees. Further advice may be found in the Highways Agency's document 'NRSWA Act 1991 Good Practice Guide for Area Teams and MACs'.

6.7.2 Guidance

There are two strands to charging potential:

- inspections and
- works

6.7.2.2 Inspections

Dealing with inspections first, there are three distinct sub strands (i) sample, (ii) defect and (iii) investigatory

- (i) Sample inspection, the CoP for Inspections gives a detailed explanation of how this regime applies. The charging rate per inspection is determined by a Statutory Instrument – Street Works (Inspections Fees) (England) (Amendment) Regulations, which are amended annually for inflation.
- (ii) Defect inspections derive from the sample, inspection procedure, investigatory works, or routine highway inspections. Although these fees are not set by regulation the Highways Authorities Utilities Committee (HAUC) recommends that the fee should be double the rate set for sample inspections.
- (iii) Investigatory inspections can be triggered by a member of the public informing the Service Provider to bring their attention to a potential hazard. Again, these fees are not set by regulation although HAUC recommends that the fee should be the same rate set for sample inspections

The types and requirements for each type of inspection are contained in Annex 6.7.1.

6.7.2.3 Works

Turning to works, the street authority has power to carry out such investigatory works as appear to them to be necessary to ascertain whether an Undertaker has complied with his duties with respect to works and reinstatement. If a defect is disclosed, the street authority is entitled to recover their reasonable relevant costs and carry out three defect inspections at the Undertaker's expense.

6.7.3 Charging

Service Providers must be charging an Undertaker, where it is cost effective to do so. The cut-off level of cost effectiveness needs to be agreed between the Service Manager and the Service Provider. Similarly, where no charges have previously been made, the cut-off date before which no charges will be raised must be agreed between the Service Provider and the Service Manager in the light of local conditions.

Invoices for these charges must be issued by the Service Provider on Highways Agency invoices which are available in pads of 25 four part sets from Highways Agency Area Performance Teams. (Area Performance Teams should obtain them from FS Accounts Receivable at Hemel Hempstead. GTN 3827 128).

Invoice sets, including codes for the entries, should be completed by the Service Provider. The details of these will be available from the Highways Agency Area Performance Teams. (If Area Performance Teams do not have these details already they will need to consult FS Accounts Receivable.)

Once completed the Service Provider should distribute the four copies of the invoice set as follows:

- Top Copy To the Statutory Undertaker supplier being charged
- 2nd Copy To FS Accounts Receivable, Hemel Hempstead
- 3rd Copy To Highways Agency Area Performance Team
- 4th Copy To Service Provider's own records

6.8 Motorway Passes

6.8.1 Introduction

Motorway Passes are issued for two purposes. They record that the Secretary of State has granted exemption from The Motorway Traffic (England & Wales) Regulations 1982 to persons in connection with “any inspection, survey, investigation or census”.

Motorway passes also record that the holder is a person engaged in duties for which a general exemption to the *Motorway Regulations* exists. Such duties include “the maintenance, repair, cleaning, clearance, alteration or improvement of any part of the motorway” and “the erection, laying, placing, maintenance, testing, alteration, repair or removal of any structure, works or apparatus, in, on, under or over any part of a motorway”.

Motorway passes state the name of the holder, their employer and detail the purpose of the pass together with mandatory instruction on safety requirements. To enhance network security all new passes issued by the Highways Agency include a digital passport style photograph of the holder.

All passes are currently issued for a maximum duration of one year and must be returned to the Highways Agency upon expiry or if no longer needed.

6.8.2 Motorway pass holders

Service Providers’ staff undertaking “any inspection, survey, investigation or census” on the motorway must hold a valid motorway pass.

Service Providers are encouraged to issue motorway passes to their staff and any sub-contractors, safety inducted suppliers etc engaged in those duties for which the general exemption applies, as detailed above, to demonstrate they have the authority to be on the motorway.

6.8.3 MAPP System

To better control and simplify the process for applying and issuing motorway passes the Highways Agency have developed an internet based system termed MAPP.

The Service Provider must make applications for motorway passes using the MAPP system.

The Service Provider must develop a process to ensure that applications for passes using the new system are only made for those persons with the appropriate competence for the duties to be undertaken.

The Service Provider must nominate a user(s) to be trained in the use of the MAPP system to the Highways Agency’s Regional Network Access and Resilience Team. They will be trained in the use of the system by staff from the Highways Agency’s BIS section.

Following training, MAPP users will be able to make immediate use of the system to apply for motorway passes for their staff, or others under their contractual direction.

Applications for passes will be processed by staff working in one of the Highways Agency’s Network Access and Resilience teams and will be despatched by post to the MAPP user for distribution to those named. Passes will be accompanied by a letter, part of which should be signed and returned to the addressee to confirm receipt.

MAPPA users can use the system to track the progress of applications. Although the system facilitates the prompt supply of passes, Service Providers should allow two weeks for supply following submission of applications.

The MAPPA system automatically generates e-mails to remind nominated user when passes are due to expire to allow consideration to be given to renewing them. Such reminders will only be for passes issued with the new system.

Any feedback on the use of the MAPPA system should be directed to the Highways Agency's Network Management Policy Team.

6.8.4 Motorway passes for third parties

Third parties may also be granted authority to exemption from the <i>Motorway Regulations</i> for "any inspection, survey, investigation or census". Service Providers must direct any enquiries for motorway passes from third parties to the Highways Agency's Regional Network Access and Resilience team.

Staff within the Highways Agency's Network Access and Resilience will arrange for third parties to be vetted to ensure that there is a genuine need for motorway passes to be issued. As part of this vetting process the third party will be appraised on the need to liaise with the Service Provider before the motorway is accessed.

In some circumstances where third parties require motorway passes to support the Highways Agency's objectives, e.g. design agents, the Highways Agency may grant access to the MAPPA system. Such access is only granted to those third parties that fulfil safety and procedural requirements. Enquiries from third parties seeking such access should be directed to the Highways Agency's Regional Network Access and Resilience team.

6.9 Optimising Traffic Management at Road works (The Use of Night-time Only Working)

6.9.1 Introduction

6.9.1.1 General

This chapter sets out a number of considerations which should be taken into account by Service Managers and Service Providers when planning traffic management for works on the Network. It draws upon experience gained by the Highways Agency on queues and delays at road works supplemented by extensive analysis of road user (QUADRO) and works costs. Various options are considered, but the emphasis is on the possible use of night-time only working. The Highways Agency is pursuing this initiative with the objective of a reduction in the disruption and delay caused by road works on trunk roads. Working in hours of darkness is dealt with in Section O3.9 of TSM Chapter 8 (Operations).

Criteria for the planning of traffic management are set out below, and they provide a decision making tool for the adoption of night-time working. Guidance is also given concerning issues that should be considered at the planning stage. Planning the works is dealt with in Section D2 in TSM Chapter 8 (Design). The range of works for which this chapter is appropriate is given in 6.9.4 below.

6.9.1.2 Definitions

In the context of road works on the Network, the following terms are used:-

- a). **"Night-time only working"** (NTO) describes activities which commence after the evening peak traffic flow has subsided and are completed prior to the build-up of the morning peak traffic flow on the following day. In such circumstances, lane closures reduce the traffic carrying capacity of a road during the night, but all lanes are available for traffic use during the day.
- b). **"24 hour working"** describes road works where the conventional daytime working is extended into a 24 hour operation by the use of shift working. The essential difference between 24 hour working and night-time only working is that during 24 hour working there is no specific requirement for the full carriageway to be restored to live traffic at the beginning of each day. Although this chapter is directed towards night-time only working, many of the issues contained within it also apply to 24 hour working.

6.9.2 Considerations

6.9.2.1 General

Safety must be the primary consideration at all road works, and during both works planning, and execution, the Service Manager and Service Provider must address the safety needs of those engaged in the road works, the road user, and the general public.

6.9.2.2 Health and Safety

Compliance with all the relevant requirements of the Health and Safety at Work Etc Act, 1974, and the regulations made under it, is necessary to safeguard those working on the highway.

The Management of Health and Safety at Work Regulations 1999 (MHSWR), requires all employers to assess the risk to workers and any others, who may be affected by their undertakings. All employers who impose duties on their employees which means that they are

required to visit or work at roadwork sites, must have carried out a suitable and sufficient risk assessment commensurate with the requirements of the MHSWR.

Further information on health and safety legislation and risk assessment is given in Part 1.

In the exercise of risk assessment, as explicitly required in MHSWR, night-time working must give rise to separate risk assessments from those produced for daytime working. In these risk assessments additional factors pertaining to night-time only working, such as fatigue, night vision and night-time temperatures must be taken into account.

Information about procedures for making risk assessments can be found in the Health and Safety Executive publications "Five steps to risk assessment" and "Successful Health and Safety Management".

Night-time work on electrical and electronic equipment systems often requires a considerably higher quality of illumination than that required for other activities. This arises from the need to identify small features and to distinguish between colours.

6.9.2.3 Road Safety

The safety of road users and the workforce must be addressed in the preparation of contract documents which must specify adherence to Chapter 8 of the Traffic Signs Manual in conjunction with the HA/CSS/HSE document "Guidance for Safer Temporary Traffic Management" of which Section 7 specifically deals with Night-time Working.

Special consideration of salting requirements and scheme specific temporary signing may be necessary.

6.9.2.4 Technical Matters

When planning night-time only operations, it is essential that the road is reopened to traffic before the following morning peak period or as stipulated in the contract or as agreed with the Service Manager.

This objective can be achieved with more certainty if the time specified for the full removal of traffic management includes a "buffer" period, particularly on traffic sensitive routes. For example, if traffic flows are such that the road is to be fully reopened by 06:00, then it could be specified that the traffic management should be fully removed by 05:30.

The past performance of individual organisations, the installed traffic management layout and/or the proposed works are factors that should be considered in determining the amount of buffer period to specify. It is recommended the buffer period be between one half to one hour. This should enable a significant amount of work to be undertaken each night without excessive risk of late removal. Additionally, an assessment should be made as works progress with consideration being given to the early stopping or abandonment of work if it becomes apparent that timely removal will not be achieved.

Planning of the night-time programme should allow for factors such as lower temperatures and higher humidity, which can affect materials behaviour. At the planning stage of maintenance project, if night-time only working is being considered materials and construction techniques should be appraised with reference to their technical characteristics and suitability for night-time working. For example, it may be necessary to specify polymer modified cements rather than ordinary Portland cement where mortars will be subject to traffic loading within hours of being placed, or to adjust the specification to incorporate additives to lower the freezing point for water based operations such as drain jetting on cold winter nights.

Some maintenance activities, particularly those requiring high levels of skill and involving fine visual judgement can, if poorly controlled, result in lower quality workmanship during night-time only working. Each aspect of work should be assessed at the planning stage to establish that the quality of work produced by a competent contractor can meet the specification under night-time only working conditions. Such assessments can be achieved by reference to previous experience. Consultations with other Service Providers may be necessary. During construction, the daily re-introduction of traffic to the working area imposes access restrictions for quality monitoring. However, notwithstanding these constraints, arrangements should be made for the systematic monitoring of quality, to ensure that specified standards are maintained.

6.9.2.5 Availability of Materials

At the planning stage of a maintenance project for which night-time working is being considered, the availability of materials should be guaranteed. In particular, it is necessary to ensure that within the locality of the road works, where such materials are required, there will be a certain and timely supply of materials such as asphalt and concrete when required. The Service Provider should check that local mixing plants are not affected by planning/environmental restraints before tenders are invited so that contractors are able to meet the requirements of the contract.

6.9.2.6 Environment

Night-time working can be highly disruptive for local residents and others affected by the works themselves, and the activities needed to service them. At the planning stage, levels of noise, light, and vibration acceptable to the appropriate Local Authority Environmental Health Department should be agreed. The Service Provider must include these in the contract documents, after checks have confirmed that they can be achieved by competent contractors. During night-time hours, the public perception of these factors is often considerably more acute than in daytime.

6.9.2.7 Publicity

Publicity must be planned well in advance by the Service Provider and should be consistent and not be the result of crisis management. Well directed publicity prior to the commencement of works can be beneficial. In particular, MPs and local councillors should always be included in advance publicity. Local residents often display greater tolerance of noise and disruption of which they have prior knowledge concerning its timing and duration.

Experience indicates that the distribution of leaflets to all affected residents and other helpful information should always be considered. For more intrusive works, personal visits to affected homes can produce higher levels of acceptance and co-operation; such courteous advice to members of the public should always be considered and normally provided.

6.9.3 Decision Making

6.9.3.1 General

A major objective in the planning of road works is the reduction of overall traffic delays. However, the works cost associated with minimising traffic delays by using night-time only working does carry a premium compared to works costs incurred for the same work undertaken in daytime. However growing experience in night-time only working has reduced this premium. For the analysis in Annex 6.9.1, 6.9.2 and 6.9.3, night-time only working was assumed to attract a premium of between 10% and 25%. The duration of a scheme was assumed to double when night-time only working was employed, based on an 8 hour working period under night-time only working compared with a 16 hour working period for a day closure.

At lower traffic flows the difference in scheme cost between the various traffic management options is often small but once night-time only working becomes valid then the difference to the next best option can become very significant. This section provides guidance for the evaluation of the additional works costs associated with night-time working against the benefits arising from the reduction in delays to road users. However, it should be noted that there are often occasions where night-time only working is the only traffic management option open for a scheme.

6.9.3.2 Capital Schemes

All schemes, for which night-time only working is a safe and technically practicable option, must be assessed to establish the optimum traffic management arrangements under which the works are to proceed. To do this, it will be necessary to calculate the total cost of the scheme under the alternative traffic management arrangements, including night-time only working. The total cost must comprise the works cost, plus the cost of the traffic management measures, plus the cost of delays, and incidents and accidents generated by the presence of the works, estimated by dedicated QUADRO runs.

Where night-time only working is unsuitable for technical reasons but QUADRO costs are high, consideration should be given to the extension of the working day as far as is practicable, to allow the works to be completed as quickly as possible. Subject to safety, technical and environmental factors and contractual conditions, the working day can be extended to 24 hours, although optimum progress is often achieved with an 18 hour day.

6.9.3.3 Optimising Major Maintenance

Annexes 6.9.1, 6.9.2 and 6.9.3 contain examples of detailed analyses of three typical maintenance schemes, a dual four lane carriageway, a dual three lane carriageway and a dual two lane carriageway. In each case the estimates total cost of the scheme is plotted against Average Annual Daily Traffic (AADT) flows, for various traffic management arrangements, including night-time only working. The analysis for optimisation covered schemes of varying cost and duration and took into account the relative costs of traffic management expressed as a proportion of the main works cost (defined simply as high, medium or low). The analysis reveals that general recommendations on valid traffic flow ranges could be given for each option. However, at one extreme or another of any given range, a particular option may not always be the optimum choice and this is indicated in Annexes 6.9.1, 6.9.2 and 6.9.3 within the text and graphs.

The recommendations for each option are valid over a range of daily traffic flows. Where there are two or more recommendations for a given flow rate, each needs to be considered on its own merit. If the traffic flow figure lies outside the recommended range for a given option, it does not necessarily mean that particular option cannot be used. However, if this is the case it is probably unsuitable.

6.9.3.4 Routine Maintenance

Routine maintenance activities should be combined and undertaken within a single lane closure or mobile lane closure wherever possible, and considered for night-time only working. Planned or routine tasks can often be undertaken to take advantage of traffic management provided for other parallel activities. The Highways Agency's maintenance contracts for its traffic management systems (HATMS) contain mechanisms to facilitate short notice requests for night-time repair.

It is strongly recommended that routine maintenance operations should also be assessed to establish the optimum traffic management arrangement under which the works are to proceed. The total assessed cost of the operation under each traffic management arrangement will comprise the works cost plus the cost of delays and incidents etc as estimated by QUADRO.

6.9.4 Carrying out Works

6.9.4.1 Current Practices

Night-time only working has been adopted as a suitable working method on heavily trafficked roads for the following activities:

- a) Carriageway resurfacing and patching;
- b) Surface dressing;
- c) Joint sealing;
- d) Safety fence maintenance and repairs;
- e) Gully cleaning and sweeping;
- f) Weed spraying;
- g) Road signs and lighting maintenance;
- h) Carriageway markings;
- i) Reflective stud maintenance;
- j) Deflectograph surveys;
- k) Falling Weight Deflectometer (FWD) surveys;
- l) Visual surveys (HAPMS Surveys);
- m) Inspection and maintenance of structures;
- n) Installation of electronic road loops.

This list of activities is not definitive, and with the advance in the capabilities of plant and materials, and the use of new techniques, it is anticipated that further maintenance activities will become suitable for night-time only working in future.

6.9.4.2 Summary

Night-time only working **should be considered**, wherever it is a safe, technically and environmentally practicable option, for maintenance works on:-

- (a) D2L Carriageway - traffic flows > 45,000 AADT
- (b) D3L Carriageway - traffic flows > 80,000 AADT
- (c) D4L Carriageway – traffic flows >110,000 AADT

Annex 6.1.1 Network Occupancy Management Plan Template**Introduction & Purpose**

The purpose of the Network Occupancy Management Plan is to set out the approach to managing the area or route network.

This document is a template against which individual service providers can base their own individual network occupancy management plans. Instructions, guidance and examples are shown in red text – this text should be removed, completed, replaced or amended as appropriate.

1.1 Area / Route Details

Area / Route	<i>Area number or route name</i>
HA Area Team NOM Contact	<i>Name and contact number</i>
Service Provider NOM Contact	<i>Name and contact number</i>
NAR Team Network Access Manager	<i>Name and contact number</i>

1.2 Implementation & Departures

Describe in this section any elements of the Network Occupancy Management Process that are not being applied, for example, where the requirement to enter activity information onto the SRW system in 'near real time' outside of normal office hours. Any agreed departures from any other relevant standards or procedures, such as the requirements of AMM58/05, should also be detailed in this section. Where full implementation is applicable this should be clearly stated.

1.3 Performance Targets & Priorities

Provide details in this section of specific area and route performance targets and details of any route priorities, particularly in respect of the PSA target. PSA and non-PSA routes should be clearly identified.

Details of Area or Route Performance Targets (Section 6.2)		
Route	Performance Target	Comments

Details of Area or Route Priorities (Section 6.3)		
Route	Location/Sections	Details

1.4 Coordination Arrangements - Contact Details

Relevant Third Party Term Contracts	
Contract	Contact (Name and Number)
NTCC (TiS)	<i>Name and contact number</i>
NRTS	<i>Name and contact number</i>
TechMAC Provider	<i>Name and contact number</i>

Adjacent Areas & DBFO Routes	
Area / Route	Contact (Name and Number)
	<i>Name and contact number</i>

Adjacent Local Highway Authorities	
Authority	Contact (Name and Number)
	<i>Name and contact number</i>

1.5 Coordination Arrangements - Formal Coordination/Scrutiny Arrangements

Provide details in this section of the arrangements for coordination and forward planning, specifically details of the regime to be adopted to meet the requirements of section 6 and 7 of the Network Occupancy Management Process. Where existing meeting and liaison arrangements are being utilized these should be made apparent.

Details of Coordination / Scrutiny Meetings (Sections 6.10 and 7.7)		
Frequency	Location	Scope
<i>monthly</i>		
<i>quarterly</i>		

1.6 Coordination Arrangements - Detailed Area / Route Specific Arrangements

Provide details in this section of the specific coordination issues relevant to this particular area or route.

Details of Alternative Route Conflicts (Section 6.4)	
Route/Sections	Route/Sections

Details of Local Authority Coordination Meetings (Section 6.8)			
Authority	Location	Frequency	Attendance

Annex 6.1.2 Activity Booking Information

The following core information is requested for all activity booking on the network

SRW Reference No	
Status	
Road No	
Start date	
End date	
Description	
Notes/Comments	
Location Textual	
Expected delay	
Closure type	
Project Manager's name	
Project Manager's telephone	
Contractor's name	
Contractor's telephone	
Activity type	
Reference number	
Traffic Management	
TM Start grid reference (12 fig)	
TM End grid reference (12 fig)	
Activity Promoter	
Nature of works	
Narrow lanes	
Temporary speed limits	
To be published	
Summary Closure Records Only	
Hardshoulder only	
Closed Lanes	
Added Lanes	
All Closure Records	
Component data (i.e. mapping data on which sections of road are affected)	
Detailed Closure Records Only	
TM Layout data	
Detailed Diary data	

Annex 6.1.3 Management of Nationally Significant Activities**6.1.3.1 Introduction & Purpose**

This annex to the Network Occupancy Management process chapter sets out the definition of Nationally Significant Activities, provides an overview of the suggested management arrangements and sets out a simple checklist of considerations to be made when planning and preparing for such activities.

6.1.3.2 Definition of Nationally Significant Activity

A Nationally Significant Activity is an activity that is likely to cause significant disruption across the network extending beyond an individual area or route. Nationally Significant Activities are those that require particular planning at a regional and national level which goes beyond the 'regional coordination' undertaken by Service Providers.

An event of national significance would not necessarily need to be considered as a Nationally Significant Activity unless it had an impact on the network extending beyond a particular area and its immediate neighbouring areas.

Nationally Significant Activities could be works activities or off-network events. An example of a works activity that might be considered a Nationally Significant Activity would be the closure of a motorway for demolition of a structure. An example of an off-network event that might be considered a Nationally Significant Activity would be the 2012 Olympics.

Nationally Significant Activities will typically require extensive long term planning and involve a wide range of stakeholders.

6.1.3.3 Management of Nationally Significant Activities

The Regional Network Access & Resilience Teams' Network Access Managers are responsible for taking an oversight on all Nationally Significant Activities on behalf of the Network Performance Managers.

It is not possible, or appropriate, to prescribe the way Nationally Significant Activities should be managed as the arrangements will depend on the particular details of the planned activity. Clearly the Highways Agency's role will depend on whether the activity is its direct responsibility, such as a road scheme, or one where then Highways Agency is simply one of a number of stakeholders, such as an off-network event.

A simple checklist has been provided as a guide, however specific plans should be developed for all Nationally Significant Activities. It is suggested that a risk based approach be taken to planning and an 'issues and mitigation' register should be developed for each Nationally Significant Activity.

6.1.3.4 Activity Details

Activity	<i>Title</i>
Description	<i>Description</i>
Location	<i>Detailed location (route, region, authority)</i>
Promoter	<i>Name and contact number</i>
Date	<i>Planned start and end dates</i>
Network Access Manager	<i>Name and contact number</i>
Area / Route	<i>Area number or route name</i>
Service Provider Contact	<i>Name and contact number</i>

6.1.3.5 Action Checklist

Action Checklist	Yes/No	Date
Event Plan: received		
Event Plan comments: returned		
Safety Advisory Group meeting attended		
Police and Emergency Services contacted		
Service Providers contacted		
SRW – Programmed Works checked		
National Authorities contacted (Scotland and Wales)		
LHA contacted		
NTCC contacted		
RCC contacted		
Freight Transport Association contacted		
Media/Publicity prepared/notified		
HA Regional Contacts		

6.1.3.6 Issues and Mitigation

Issue	Mitigation

Annex 6.1.4 Network Occupancy Management and the PSA Reliability Target

6.1.4.1 Introduction

This annex provides supplementary guidance and direction on the policy detailed in the Network Occupancy Management (NOM) process, issued under AMM83/07 and included in this document at Part 6.1. It sets out the Highways Agency's policy on specific measures to be implemented in respect of the PSA Journey Time Reliability Target.

6.1.4.2 Working Time Restrictions

Lane closures on PSA routes between 0600hrs and 2000hrs are not normally permitted and any such closures that are needed will require specific written approval. Where the activity is 'significant', approval from the Regional Operations Board (ROB) will be required and, for all other activities, approval will be required from the Network Performance Manager (NPM).

Significant activities are those activities where the traffic management arrangements are likely to impact on the PSA measure. This would typically include longer term activities or activities such as major renewals and the larger area improvement schemes.

6.1.4.3 Temporary Speed Limits

The guidance contained in the recently updated version of Chapter 8 of the Traffic Signs Manual must be followed. Specifically, the recommended reductions in speed limits must be adopted by the Service provider which, in effect will mean that, on dual carriageway roads where the national speed limit applies, a temporary restriction of 50mph will be used. Reductions in excess of the recommended 20mph are not permitted without specific approval. In the case of significant activities approval will be required from ROB and, for all other activities, from the NPM. There may be circumstances where activity promoters identify specific hazards where an appropriate risk mitigation may be to introduce a temporary speed limit reduction of greater than 20mph - before taking this course of action all avenues of mitigating the identified risk in other ways must be explored by the Service Provider. In seeking approval for a departure it will be necessary to demonstrate that alternative risk mitigation actions have been considered.

Average speed check cameras should be implemented to enforce temporary speed limits for all significant activities.

Where TASCAR systems for roadworks are to be used, IAN 113/08 sets out amendments for the current notes in the Manual of Contract Documents for Highways Works (MCDHW).

6.1.4.4 Approval Process

The Service Provider must complete the Departure Approval Form, attached within Annex 6.1.5, in all cases where approval, as detailed above, is required. The completed form must be submitted to the Service Manager for checking.

For significant activities requiring approval from ROB the Service Manager will e-mail the checked and signed form to the RPP e-mail inbox with a covering submission expanding on the basic details included on the form. The submission will be considered for a decision by the Divisional Director in his capacity as Chair of ROB and, if he feels it necessary, it should be tabled at the next ROB meeting for a decision.

For all other activities, those requiring approval from the NPM, the checked and signed form will be submitted by the Service Manager to the NPM for approval.

The commencement of the activity is not permitted until such time as approval has been granted.

Details of the proposed activity must however be entered onto SRW as a 'provisional' booking, by the Service Provider responsible for the Network on which the activity is planned, in the timescales set out in the NOM process.

The approval process will be subject to audit by the regional Network Access Resilience Teams and therefore records of approvals must be recorded and readily available for inspection.

6.1.4.5 Additional Requirements

Breakdown Recovery and CCTV are to be standard provision on schemes over £4M value or more than 6 months duration. Exceptions to this must be detailed by the Service Provider in the submission to ROB and will require specific approval.

Monthly review and amendment of scheme temporary traffic management signage must be undertaken to minimise traffic delays. All schemes must have clear signage at the start and finish outlining what is being done and the completion date. These reviews will be considered at the monthly area network occupancy meetings.

Annex 6.1.5 – Network Occupancy Management – Departure Approval Form

This form is to be used where a departure from the requirements set out in Annex 6.1.5 is required and should be used specifically where traffic management is being applied on PSA routes during PSA hours. This form should also be used where traffic management is required on non PSA routes where there may be an impact on PSA routes.

SRW Closure No.			
Does the departure relate to		Select from list	
Area Team		Select from list	
Project/Scheme <i>Brief description (to include Type of Work and what category in line with SRW)</i>			
Location <i>Brief details of location (to include junctions roundabouts and slip roads)</i>			
Direction		Northbound Eastbound	Southbound Westbound
		<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>
Duration <i>Estimated duration of works</i>			
Road Standard		Carriageway Select from list	Number of lanes Select from list
		Current PSA Variance Current Link Rank Two Way AADT Maximum Hour Flow	
Traffic Management Arrangements <i>Brief description of proposed lane closures and restrictions, duration and scheme length</i>			
Has alternative traffic management been considered		Select from list If yes, what	
Reason for Departure <i>Brief scheme details, include explanation of why restrictions required</i>			
Main reason for not planning work outside PSA hours Explanation		Select from list	
Effect on traffic		Select from list	
Is this route a PSA measured route		Select from list	
If no, do the works impact on a PSA measured route If yes, which route Impact on PSA JTR measure		Select from list	
Approval			
Submitted by (Service Provider)		Signature	Name
			Date
Checked by (HA Area Team)		Signature	Name

Network Occupancy Management – Departure Approval Form

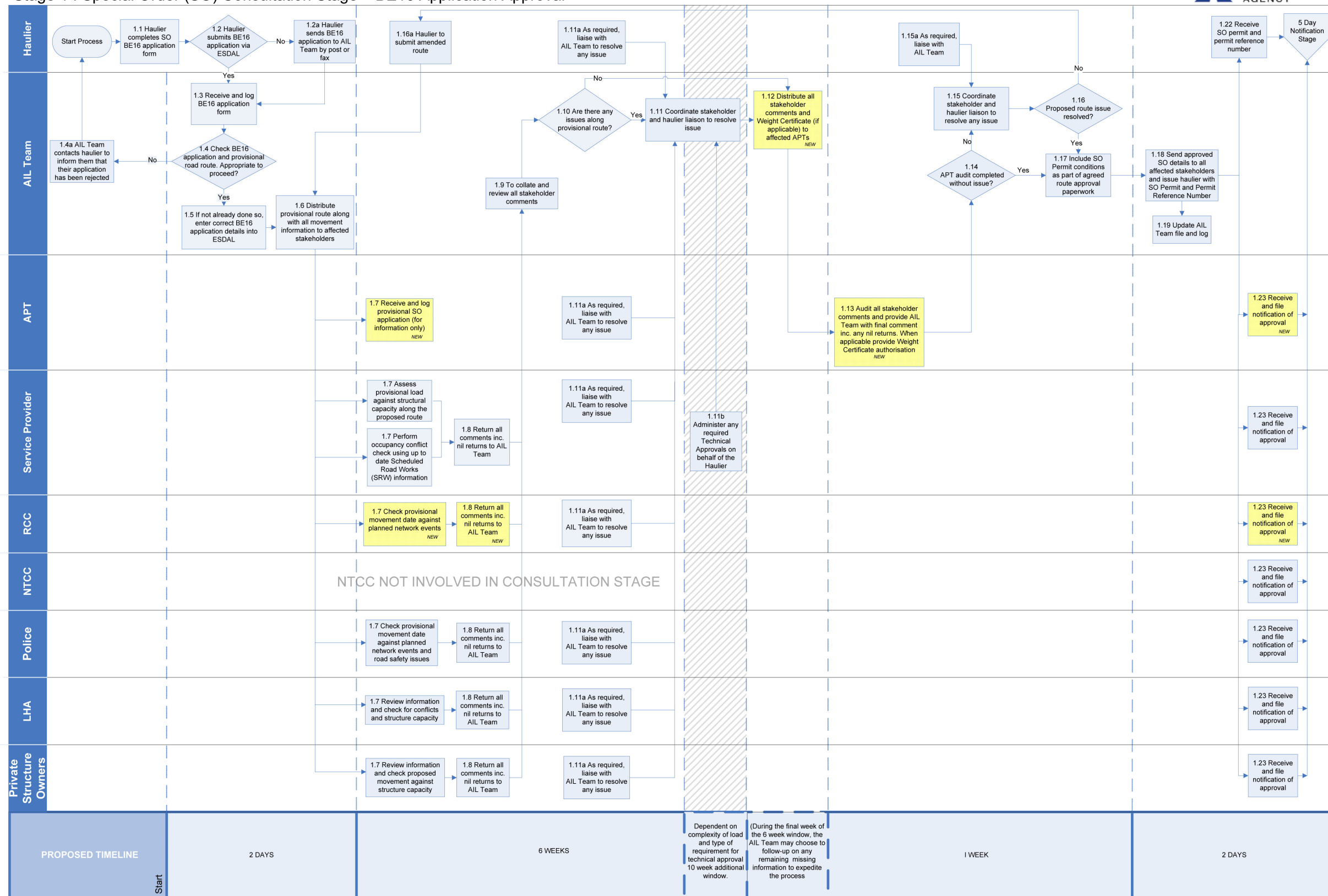
		Date
Approved (Network Performance Manager)	Signature	Name Date
ROB Approval	Signature	Name Date

Annex 6.3.1 – Code of Practice for the erection of temporary traffic signs to special events

1. Temporary signs should be provided only for events expected to attract a considerable volume of traffic from outside the local area and where there is adequate car parking for vehicles directed to the event. They should not be used on routes where there are already permanent local direction or tourist signs to the site although for some major events it may be desirable to indicate other routes to assist traffic management. Signs should not normally be erected more than 48 hours before an event or retained more than 48 hours after it has ended.
2. The signs must comply with the provisions of the Traffic Signs Regulations and General Directions (currently set out in regulation 53 of the 2002 Regulations) and must give clear information about the route to be followed in a size appropriate to the speed of traffic.
3. The badge of the road user organisation erecting the sign may be included. Commercial names of event sponsors should not be included unless similar events in the same areas at the same time make such identification necessary for traffic management purposes. Dates and times should not normally be included since the signs are not intended to advertise an event but are for people who know about it and need guidance to the site. Such information may however be included if the traffic authority considers it would be helpful to other road users to have advance information about likely congestion and is satisfied that it would not make signs too complicated to be easily legible and so endanger road safety.
4. The design, construction, mounting and siting of signs should be in accordance with the advice given in TSM Chapter 8 Sections D4 (Design) and O4 (Operations). The signs should be built to sound engineering principles and be of robust construction but the materials used need not be as durable as those used for permanent or portable signs. The fixings used must not damage the posts to which signs are fixed.
5. Signing proposals should be put to the appropriate traffic authority in time for them to be given proper consideration and for the police to be consulted where necessary. This should normally be at least 4 weeks before the event. Proposals should include information about the nature of the event, the expected number of visitors and the provisions for car parking. The distance from which signs should be provided and the number of routes to be indicated depends on the nature of the event and the volume of traffic anticipated but once signing has commenced adequate continuity should be provided along the route. Signing for up to 5 miles or from the nearest A or B road should usually be adequate. More extensive signing may be appropriate for events which are expected to attract very large numbers of visitors (e.g. major air shows) but it is very rarely appropriate for signs to temporary events to be erected on motorways. The traffic authority is the final arbiter of the signing appropriate for any event and may remove or re-site any signs which have not been approved at the cost of the body which erected them.
6. Organisations erecting temporary traffic signs on the highway must take all necessary measures to avoid danger to the public or obstruction of traffic during the operation as specified in TSM Chapter 8 and the booklet "Safety at Street Works and Roads Works a Code of Practice". These organisations are responsible for the cost of making good any damage to street furniture and Statutory Undertakers' equipment resulting from the erection of the signs and must have adequate public liability insurance cover. They will be required to indemnify the traffic authority against any claim arising out of an accident alleged to have been caused by the inadequacy of a temporary sign whether in siting, visibility, insecure mounting or other cause.

Annex 6.5.1 – Abnormal Indivisible Load Special Order Process - Stage 1

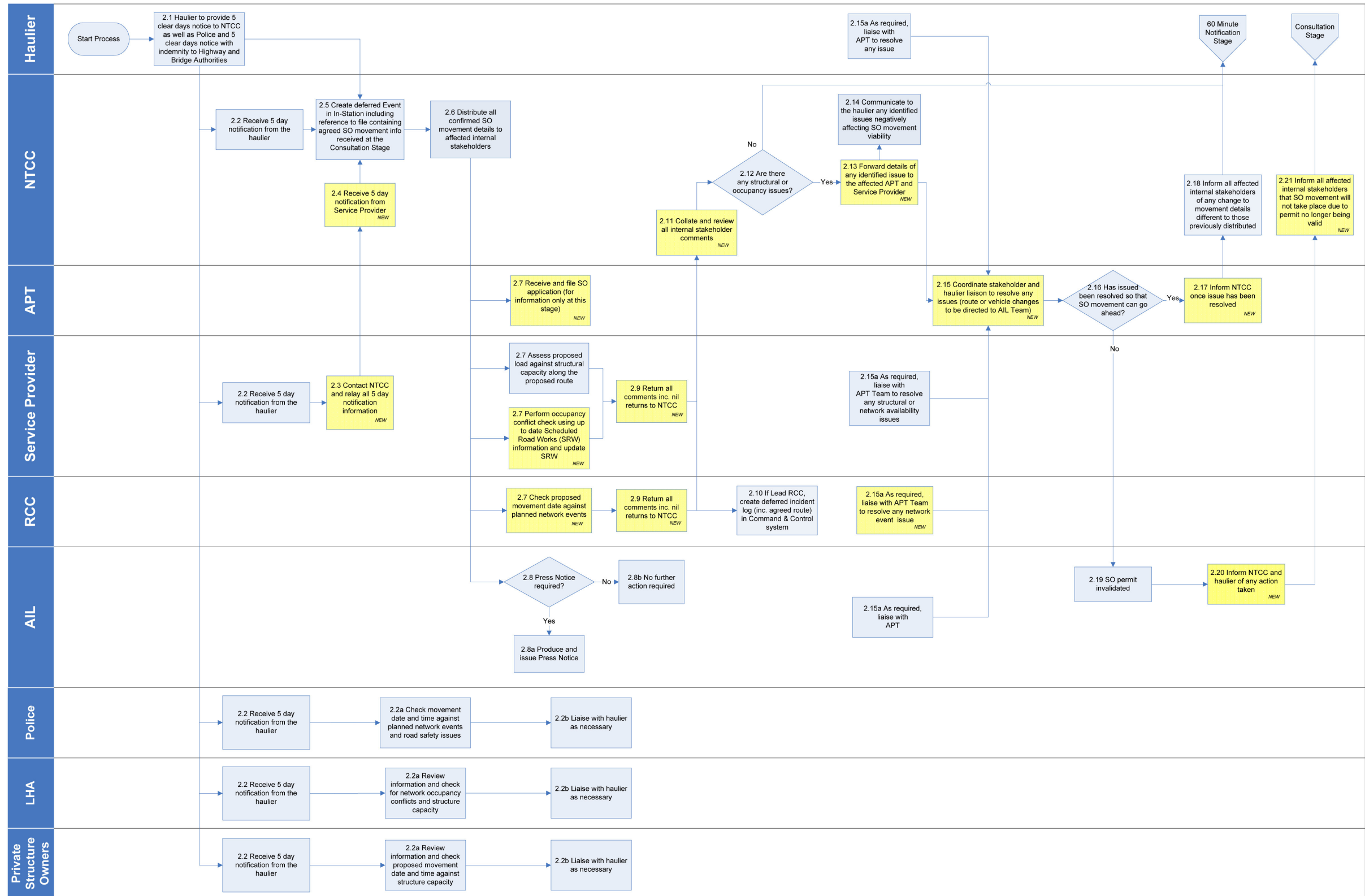
Stage 1 : Special Order (SO) Consultation Stage – BE16 Application Approval



Final version Sept '08

Annex 6.5.2 – Abnormal Indivisible Load Special Order Process - Stage 2

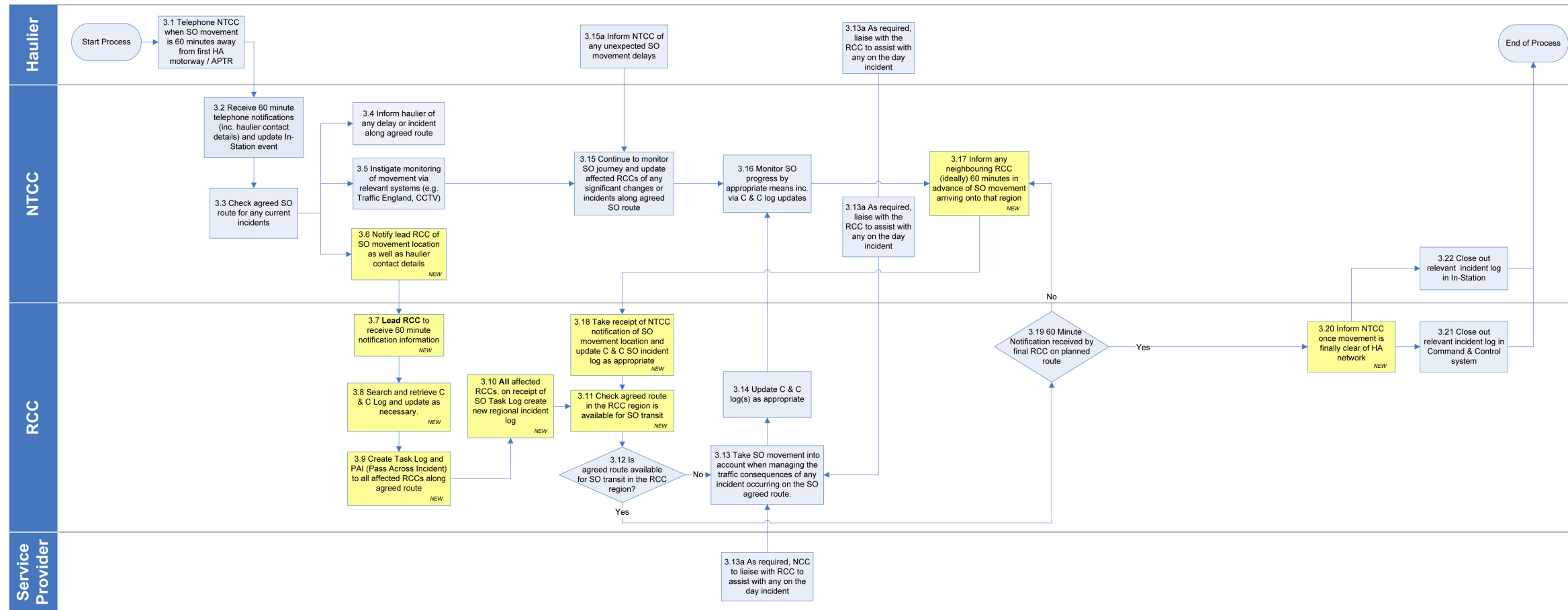
Stage 2: 5 Day Notification Stage



Final version Sept '08

Annex 6.5.3 – Abnormal Indivisible Load Special Order Process - Stage 3

Stage 3 : Special Order (SO) 60 Minute Notification Stage



Final version Sept '08

Annex 6.6.1 Preliminary Condition Report

- 1 The Preliminary Condition report produced by the Service Provider will provide the consultant/designer with an overview of the maintenance needs of that section of motorway or trunk road covered by his commission. The report must be sufficiently comprehensive to convey the Service Provider's understanding of the condition of the motorway or trunk road. It should include the following:-
 - a) Date opened to traffic;
 - b) Original pavement construction;
 - c) Maintenance history of carriageway;
 - d) Plan of each carriageway showing the residual life in 100 metre lengths and survey date;
 - e) Plan showing major surface defects on each carriageway;
 - f) An indication of any slope stability problems;
 - g) An indication of the condition of the drainage;
 - h) An indication of the condition of any lighting, CCTV or communications and installation.
- 2 For each structure, the following information should be provided:-
 - a) The maintenance history including the results of any assessment and an outline of any upgrading or strengthening work undertaken;
 - b) An indication of any problems due to ASR, carbonation, chloride attack, etc.
- 3 The Service Provider should comment on the need for and timing of any future maintenance and indicate what work, if any, has been included in the 5 year rolling programme.
- 4 The following detailed information is likely to be required by the consultant/designer and this should be provided separately by the Service Provider when requested:-
 - a) Deflectograph output from DEFLEC;
 - b) CHART output;
 - c) Records of pavement construction;
 - d) Results of trial holes/cores;
 - e) Results of CCTV drainage reports;
 - f) Principal bridge inspection reports;
 - g) General/special bridge inspection reports;
 - h) Results of bridge assessments;
 - i) Bridge Forms 277;
 - j) Records of the type and extent of any existing lighting, CCTV or communications installation.

Annex 6.6.2 Temporary Withdrawal of Responsibilities**Model Letter to Service Provider**

- 1 In accordance with Clause 6 of the Agreement for the Maintenance of Trunk Roads and Motorways dated [], I am seeking your consent to the temporary withdrawal of responsibilities from your Authority for the maintenance work specified in the attached schedule.
- 2 You will be aware that [] have been working on behalf of the Highways Agency on the proposed TPI Scheme [] between [] and []. To minimise disruption to the travelling public, we propose to incorporate any necessary maintenance works to the carriageway and the structures in the contract and to transfer responsibility for the design and supervision of these maintenance works to [].
- 3 You will retain responsibility for routine maintenance of the Network up to the start of the widening contract. This will include responsibility for inspections of the carriageways, carried out in accordance with the Network Management Manual and the Routine & Winter Service Code, and inspections of structures, carried out in accordance with DMRB Vol. 3 Section 1. For the duration of the contract, the Contractor will be responsible for routine maintenance of that part of the Network within his site. On completion of the contract, you will be asked to resume normal Service Provider delegated responsibility for this section of the Network and a further letter will be sent to you at that time. There will be no transfer of responsibility to [] or the Contractor in respect of winter (or electrical) maintenance.

SCHEDULE

The schedule should set out clearly the maintenance responsibilities to be transferred to the consultant/designer, define the length of Network involved and the duration of the transfer with start and finish dates.

Annex 6.7.1 Inspection of Statutory Undertaker's Works**Introduction**

- 1 It is accepted that reinstatements, even when undertaken to the required standard, have a long-term detrimental effect on the structure of the highway. This effect is significantly increased where the reinstatement is *not* undertaken to the correct standard. Deficiencies in reinstatements, and in signing and guarding, can present a danger to road users.
- 2 The importance of the inspection regime implemented by Service Providers cannot be understated. Although responsibility for reinstatement lies with the Undertaker, liability resulting from deficiencies can fall to the street authority where appropriate actions have not been taken following identification of a defect. This liability may also extend to situations where deficiencies in street works are not identified during the street authority's routine activities on the street.
- 3 It is the responsibility of all Service Providers to implement appropriate measures to ensure the safety of road users and protect the Highways Agency from any potential liability resulting from deficiencies on the Network. A regime for undertaking inspections, and robust procedures for dealing with deficiencies identified must satisfy both of these requirements.

Relevant Documentation	
NRSWA	Section 65 and Sections 70 to 73 and 75
Regulations	<i>The Street Works (Reinstatement) Regulations 1992 (and amendments)</i> <i>The Street Works (Inspection Fees) (England) Regulations 2002</i>
Codes of Practice	<i>Code of Practice for Inspections</i> <i>Specification for the Reinstatement of Openings in Highways</i> <i>Safety at Street Works and Road works - A Code of Practice</i>

1 General Arrangements

- 1.1 The Act places a clear responsibility on the Undertaker executing the work to meet the statutory standards specified for both reinstatement of those works and the signing and guarding of the works while they are in progress. Undertakers are expected to supervise and inspect their own works, identify deficiencies, and instigate corrective action as required. The street authority's role is not one of supervisor but powers are available under the Act to take certain actions when deficiencies are identified.
 - 'Deficiencies' are either a failure to meet the standard defined within the Specification for the Reinstatement of Highways (known as a 'defect') or the failure to meet the signing and guarding requirements specified within the Safety at Street Works Code of Practice (known as an 'inadequacy').
- 1.4 It is clear from evidence gathered by many local highway authorities that a significant amount of work executed by Undertakers fails to meet the required standards in respect of both reinstatement and signing and guarding.

- 1.3 The consequences of deficiencies in reinstatement and signing and guarding of street works will be greater on motorways and trunk roads due to the higher volumes of traffic carried on this Network. The Highways Agency therefore expects that a full 30% of each Statutory Undertaker's works to be inspected and any subsequent defect and improvement notice procedure vigorously pursued, to ensure that the impact of street works is kept to a minimum. The relatively low levels of street works activity on motorways and trunk roads, coupled with the high level of routine inspection undertaken on the Network, means that a more rigorous, pro-active inspection regime can be easily implemented by Service Providers.

- 1.4 It should also be noted that Undertakers are expected to regularly inspect all their own works, to identify any deficiencies and initiate corrective measures as required. Where defects are identified they must notify the street authority and provide a timetable for carrying out remedial works. The defect regime does not apply and the charges for additional inspections cannot be levied unless the Undertaker fails to carry out the work within the specified timescale.

2. Sample Inspections

- 2.1 Sample inspections are carried out on a specific number of inspection units as agreed with the Undertaker on a random basis at 3 specific stages in the Undertaker's works as defined in the Code of Practice and as shown below. Any defects or inadequacy found as a result of these inspections should be notified to the Undertaker immediately. The results of all sample inspections should be reported to each Undertaker, quarterly in arrears.

Cat A	During the works
Cat B	Within the six months following interim or permanent reinstatement
Cat C	Within the three months preceding the end of the guarantee period.

- 2.2 To enable large and small works to be inspected at the same rate, sample inspections are based on inspection units. One inspection unit is 200m or part of 200m of trench or a number of none trench excavations within 500m, as laid down in the code of practice.

- 2.3 The main purpose of the sample inspection regime is to provide a performance measure on the Undertakers' works. If more than 10% of the sample inspections in a 3-month period reveal a defect or inadequacy an improvement notice should be issued (if the Undertaker carries out 50 or less inspection units in a year this is at the discretion of the street authority). Separate improvement notices must be issued for defects or inadequacies. Where an improvement notice has been issued the Undertaker concerned must develop an action plan to satisfy the street authority that the necessary actions are being taken to rectify the problem.

- 2.4 Significant failures in an Undertaker's works resulting in the need to issue an improvement notice should be reported to the Highways Agency's Regional HAUC (Highways and Joint Utilities Committee) Representative so that the issue can be made known to other HAUC members. The results of all sample inspections should be reported to Regional HAUC representatives on a quarterly basis, to enable Undertaker performance to be compared with other highway authorities in that Regional HAUC.

- 2.5 Defective reinstatements have a detrimental effect on the surrounding structure and fabric of the highway and the long-term resultant repair costs, although perhaps not directly attributable to street works, are significant. Service Providers should ensure a pro-active regime of street works inspections is implemented. The Code of Practice allows for

inspection fees to be charged against a sample of 10% of works at each phase, additional works may be inspected but a fee is not recoverable.

3 Routine Inspections

- 3.1 These are inspections of the Network for the Highways Agency's own purposes such as Safety Patrols, Safety Inspections or Detailed Inspections. These routine inspections should be actively used to inspect any Undertaker's works in the vicinity. Procedures should be in place to notify the Undertaker of any defects or inadequacy found during these inspections and take any follow up action as may be necessary.

4 Investigatory Inspections

- 4.1 When a report is received from a third party, for example the police or a member of the public, a site visit may be undertaken to confirm the defect. Any defects or inadequacies found as a result of these inspections should be notified to the Undertaker.
- 4.2 Investigatory works can be undertaken to determine whether a reinstatement has been carried out to the required standard. These works could typically include material testing, texture depth measurement, skidding resistance measurement and compaction testing. Investigatory works, such as testing and measurement can be undertaken during the reinstatement process but more often they will be done following completion of the reinstatement using intrusive methods such as coring or excavating trail holes.
- 4.3 In order to protect the fabric of the highway, Service Providers may undertake core sampling of all permanently reinstated carriageway excavations of Statutory Undertaker's works. If such a programme of coring is undertaken the cost of the coring for those that are subsequently found to be defective is recoverable from the Statutory Undertaker.

5 Defect and Inadequacy Inspections

- 5.1 When a reinstatement defect is identified from any of the above inspections, the following further inspections can be undertaken:
- Joint inspection with the Undertaker to agree the defect
 - An inspection during execution of the remedial works.
 - An inspection on completion of the remedial works.
- 5.2 When an inadequacy in signing and guarding is identified there is no provision for further inspections of the corrective action taken by the Undertaker. Further inspections can be undertaken if considered appropriate but the Undertaker will not be liable to pay inspection fees (as detailed below).

6 Collection of Inspection Fees

- 6.1 Inspection fees are reviewed by HAUC on a regular basis and then defined by regulation.

The following table details the charges that can be levied

Inspection Type	Charges allowed
Sample inspections	Charges will only be made for inspections carried out at the rate in the regulations for a sample inspection.
Routine inspections	No charge is made for these inspections.

Investigatory inspections	If the site is visited and a defect/inadequacy exists a fee as prescribed in regulations for a sample inspection may be claimed.
Inspection of Section 50 works	Payment should not be claimed for these inspections as the Highways Agency obtain the fee from the licence holder at the time the licence is granted.
Defect Inspections	Payment will only be made for inspections carried out at twice the sample fee in the regulations.
Inadequacy inspections	If a joint meeting is required to resolve the problem HAUC recommends a defect fee be payable if an inadequacy is confirmed
Investigatory Works	If a defect is found the actual costs of works at that site may be recovered.

- 6.2 Local instructions on invoicing arrangements will be issued to Service Providers by Service Managers. Information on the results from inspections should be sent directly to the relevant Undertaker on a monthly basis.

7 Reporting Procedures

- 7.1 Service Providers should provide reports on street works performance as required by local instruction.

Annex 6.9.1 Recommendations for Dual 4 Lane Carriageways

Five traffic management arrangements are considered including night-time only working (see Figure 6.9.1). The recommended flow ranges are given below and are summarised in Figure 6.9.2. In addition, a graph has been prepared for a typical maintenance scheme which demonstrates the general cost trends for the various options over a range of flows, and this is shown in Figure 6.9.3.

PARTIAL CONTRAFLOW, 3 + 3 LANES (P33) - Recommended range from zero to 125,000 AADT with limited application between 95,000 and 125,000 AADT. This is the quickest traffic management arrangement to install and the easiest one with which the contractor can expedite the works.

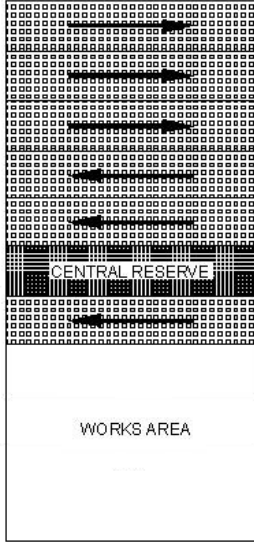
PARTIAL CONTRAFLOW, NARROW LANES, 4 + 3 LANES (PN43) – This option has a limited application range only, from 70,000 to 90,000 AADT. Inspection of the flow profiles in each direction should ensure that the four lanes are given to the carriageway with the greatest peak flow.

PARTIAL CONTRAFLOW, 4 + 3 LANES (P43) - This option has a recommended range from 70,000 to 130,000 AADT with limited application between 105,000 to 130,000 AADT. In this option inspection of the flow profiles is required prior to allocation of the four lanes.

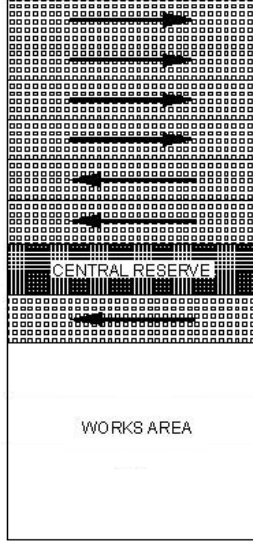
PARTIAL CONTRAFLOW, NARROW LANES, 4 + 4 LANES (PN44) - Recommended range 70,000 to 125,000 AADT with limited application between 70,000 and 90,000 AADT. This is the most expensive and complicated traffic management arrangement to install but it has the largest traffic capacity.

NIGHT-TIME ONLY WORKING (NTO), 3 + 3 LANES - Recommended range 110,000 to 200,000+AADT with limited application between 110,000 and 125,000 AADT. The use of NTO can result in increased works costs of somewhere between 10% and 25%. From around 125,000 AADT upwards, this option begins to afford significant overall cost benefits over the other options. At 170,000 AADT the overall costs are about 50% of the next best option (PN33), so that for flows approaching 125,000 AADT or more, serious consideration should be given regarding its use. At the lower end of its recommended range, the increased cost of the works becomes more significant in determining whether it should be used.

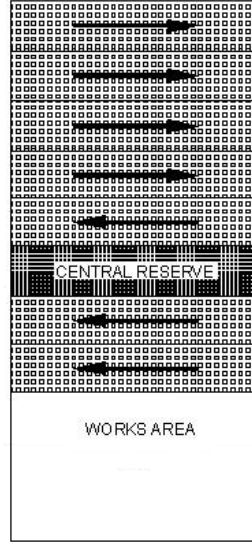
Figure 6.9.1 D4L Carriageway – Traffic Management Arrangements



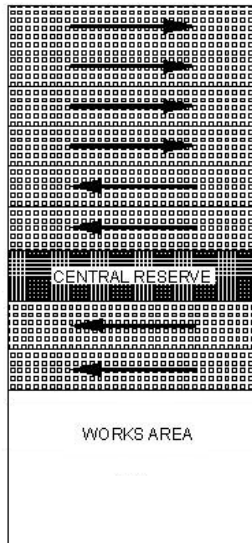
P33
Partial Contraflow, 3+3



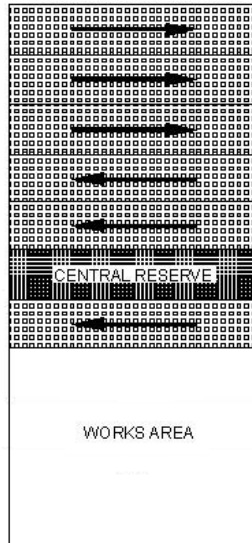
PN43
Partial Contraflow, 4+3 Narrow Lanes



P43
Partial Contraflow, 4+3



PN44
Partial Contraflow, 4+4 Narrow Lanes



NTO
Night Time Only

Figure 6.9.2 D4L Carriageway – Recommended Flow Ranges for Various Arrangements

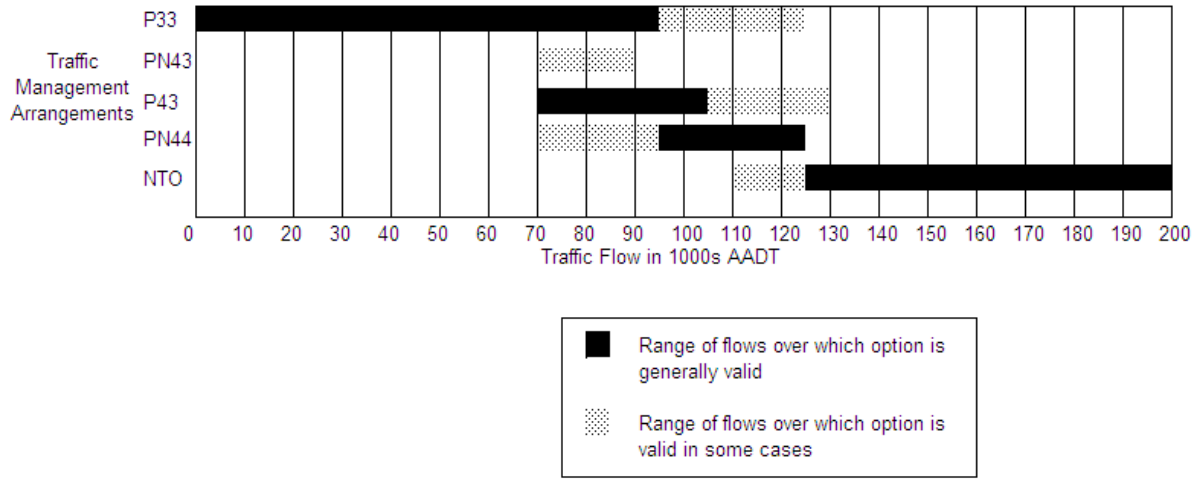
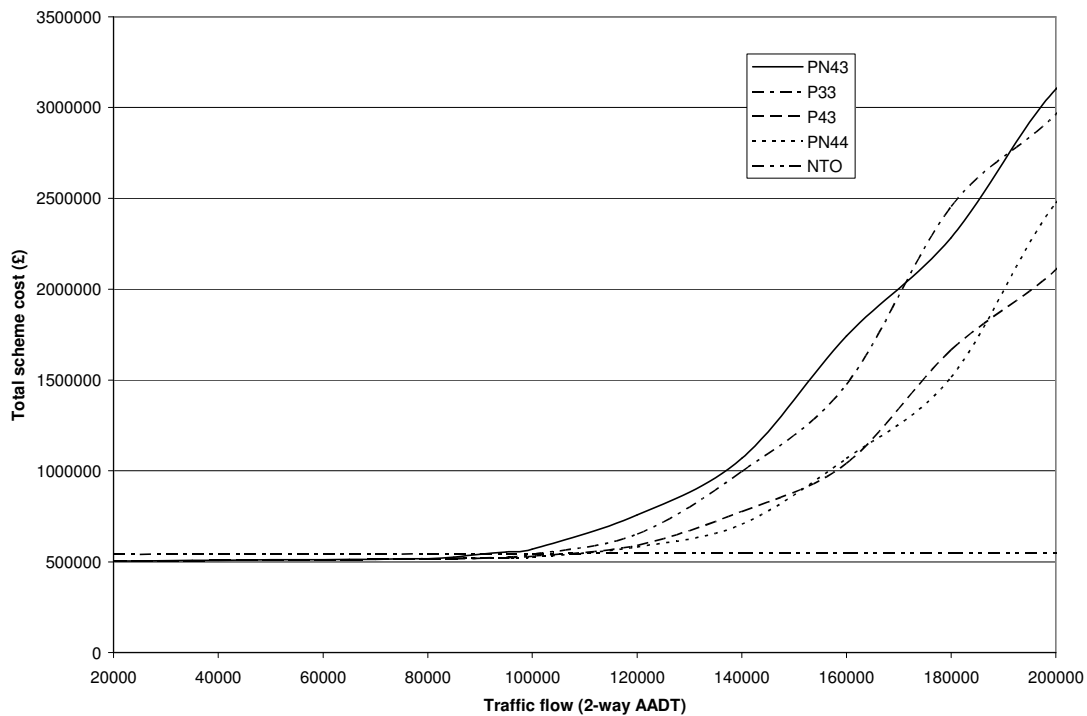


Figure 6.9.3 D4L Carriageway – Typical Maintenance Scheme showing Total Cost of Various Arrangements



Annex 6.9.2 Recommendations for Dual 3 Lane Carriageways

Five traffic management arrangements are considered including night-time only working (see Figure 6.9.4). The recommended flow ranges are given below and are summarised in Figure 6.9.5. As with the case for dual four lane carriageways, a graph has been prepared for a typical maintenance scheme which demonstrates the general cost trends for the various options over a range of flows, and this is shown in Figure 6.9.6.

FULL CONTRAFLOW, 2 + 2 LANES (F22) - Recommended range from zero to 80,000 AADT with limited application between 50,000 and 80,000 AADT. This is the quickest traffic management arrangement to install and the easiest one with which the contractor can expedite the works.

FULL CONTRAFLOW, NARROW LANES, 3 + 2 LANES (FN32) - This option has a limited application range only, from 40,000 to 60,000 AADT. Inspection of the flow profiles in each direction should ensure that the three lanes are given to the carriageway with the greater peak flow. This option can only accommodate one HGV lane in either direction due to the limitations of a standard motorway cross-section. (The absolute minimum allowable lane width for HGV traffic is 3.0m). If the HGV flow exceeds 850 vehicles per hour in either direction then the relevant HGV lane will run to capacity and excess HGVs will queue on the approach. This condition can be exacerbated by the fact that some non-HGV traffic may be using this lane, causing queues to form at lower HGV flows. Non-HGV traffic tends to use the freer flowing lane but this may not always be possible, such as when a lane serves a junction.

PARTIAL CONTRAFLOW, 3 + 2 LANES (P32) - This option has a limited application range only, from 55,000 to 90,000 AADT. If two HGV lanes are necessary in each direction, this option becomes viable again at the higher range of 145,000 to 200,000+ AADT, although has limited application between 145,000 and 185,000 AADT. It should only be chosen after the other valid options have been rejected as unsuitable. In this option inspection of the flow profiles is required prior to allocation of the three lanes.

PARTIAL CONTRAFLOW, NARROW LANES, 3 + 3 LANES (PN33) - Recommended range 55,000 to 200,000+ AADT with limited application between 55,000 and 80,000 AADT and 185,000 and 200,000+ AADT. This is the most expensive and complicated traffic management arrangement to install. It has the largest traffic capacity, although it can only accommodate two HGV lanes in one direction, and one in the other.

NIGHT-TIME ONLY WORKING (NTO), 2 + 2 LANES - Recommended range 80,000 to 200,000+AADT with limited application between 80,000 and 100,000 AADT. The use of NTO can result in increased works costs of somewhere between 10% and 25%. From around 100,000 AADT upwards, this option begins to afford significant overall cost benefits over the other options. At 185,000 AADT the overall costs are about 25% of the next best option (PN33), so that for flows approaching 100,000 AADT or more, serious consideration should be given regarding its use. At the lower end of its recommended range, the increased cost of the works becomes more significant in determining whether it should be used.

Figure 6.9.4 D3L Carriageway – Traffic Management Arrangements

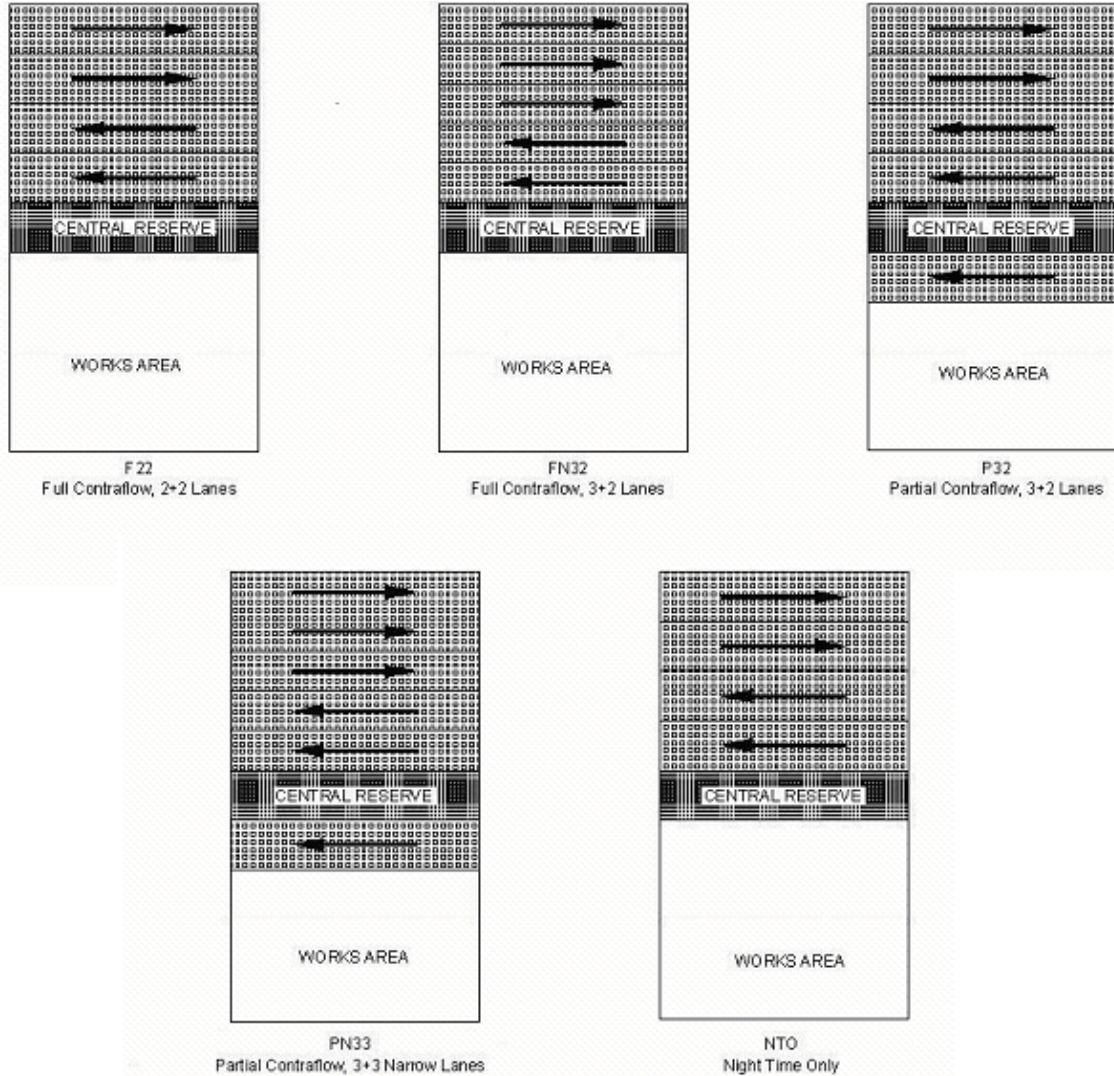


Figure 6.9.5 D3L Carriageway – Recommended Flow Ranges for Various Arrangements

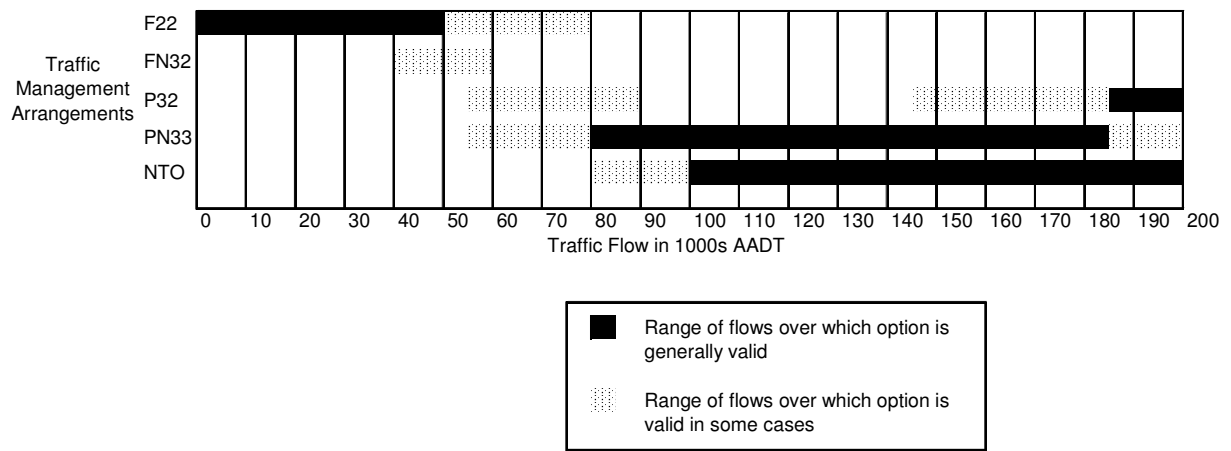
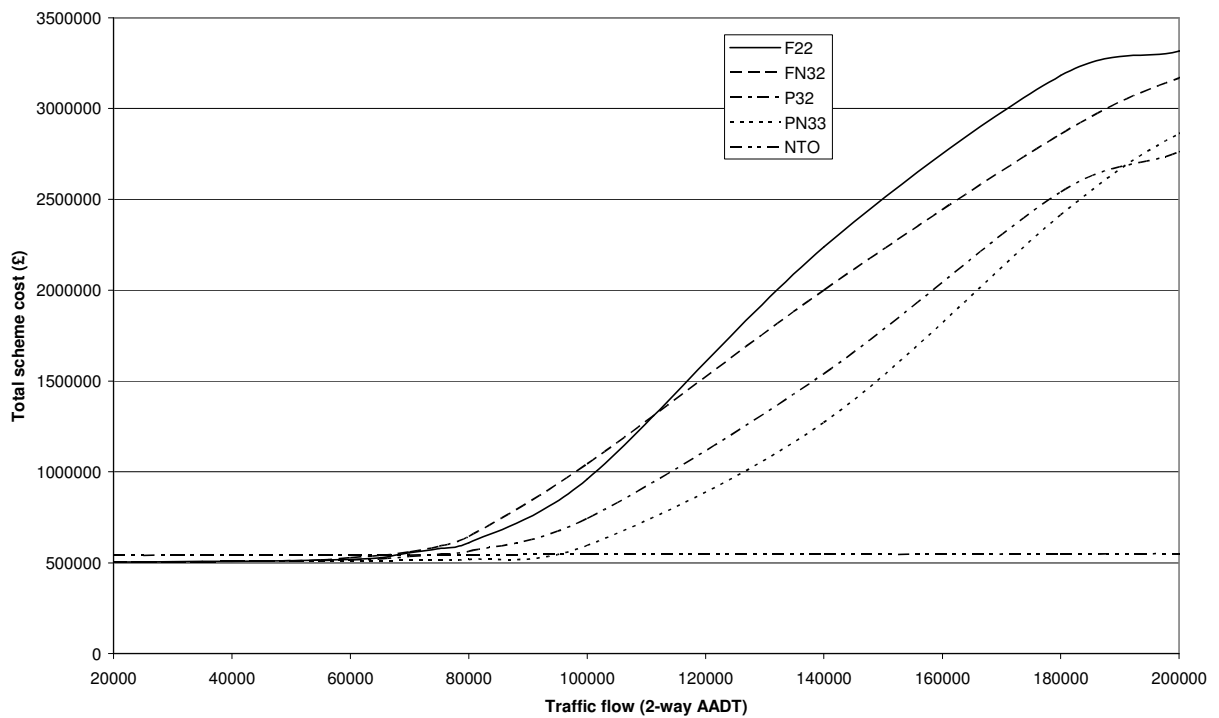


Figure 6.9.6 D3L Carriageway – Typical Maintenance Scheme showing Total Cost of Various Arrangements



Annex 6.9.3 Recommendations for Dual 2 Lane Carriageways

Four traffic management arrangements including night-time only working have been considered (see Figure 6.9.7). The recommended flow ranges are given below and are summarised in Figure 6.9.8. As with the case for dual four lane carriageways, a graph has been prepared for a typical maintenance scheme which demonstrates the overall cost trends for the various arrangements over various flow ranges, and this is shown in Figure 6.9.9.

FULL CONTRAFLOW, 1 + 1 LANES (F11) - Recommended range from zero to 45,000 AADT with limited application between 20,000 to 45,000 AADT. It is not strictly comparable with the others but it has been included because it could be employed where work is required on one carriageway and the complete central reserve.

FULL CONTRAFLOW, 2 + 1 LANES (F21) – This option has a limited application range only from zero to 25,000 AADT. This is the quickest traffic management arrangement to install and the easiest for the contractor to work with.

PARTIAL CONTRAFLOW, 2 + 2 LANES (P22) - Recommended range zero to 90,000 AADT with limited application between zero and 25,000 AADT. This is the most expensive and complicated traffic management arrangement to install but it has the largest traffic capacity. This option is also subject to works cost premium compared with the preceding options. Although this premium does not significantly affect the recommendations, it should be borne in mind at the lower end of the recommended range.

NIGHT-TIME ONLY WORKING, 1 + 1 LANES (NTO) - Recommended range 45,000 to 180,000+AADT with limited application between 45,000 and 90,000 AADT. As with the dual four lane and dual three lane examples, similar advice applies regarding the cost premium. Nevertheless, cost savings are clearly implied at flows of 90,000 AADT and higher.

Version	1	Amend.	8	Issue	Jul 09
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Figure 6.9.7 D2L Carriageway – Traffic Management Arrangements

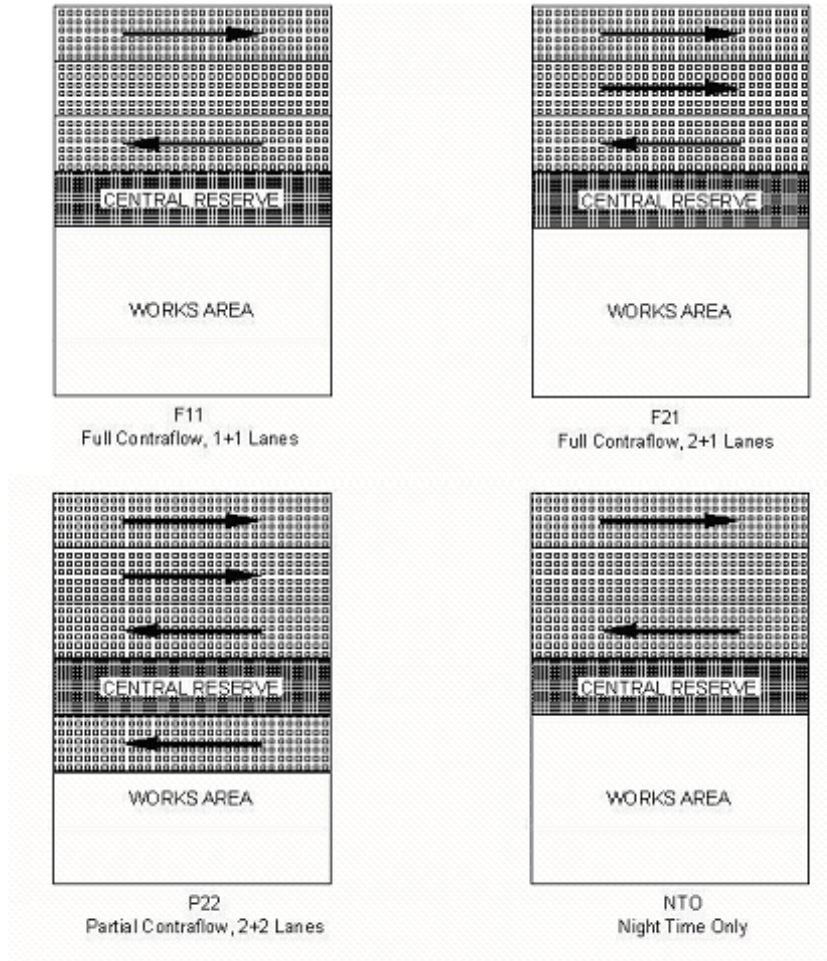


Figure 6.9.8 D2L Carriageway – Recommended Flow Ranges for Various Arrangements

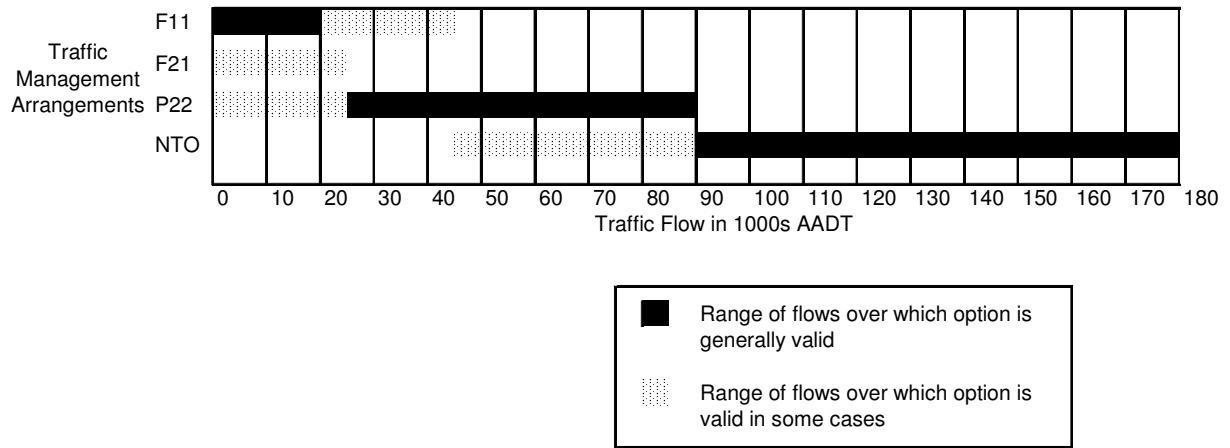


Figure 6.9.9 D2L Carriageway – Typical Maintenance Scheme showing Total Cost of Various Arrangements

