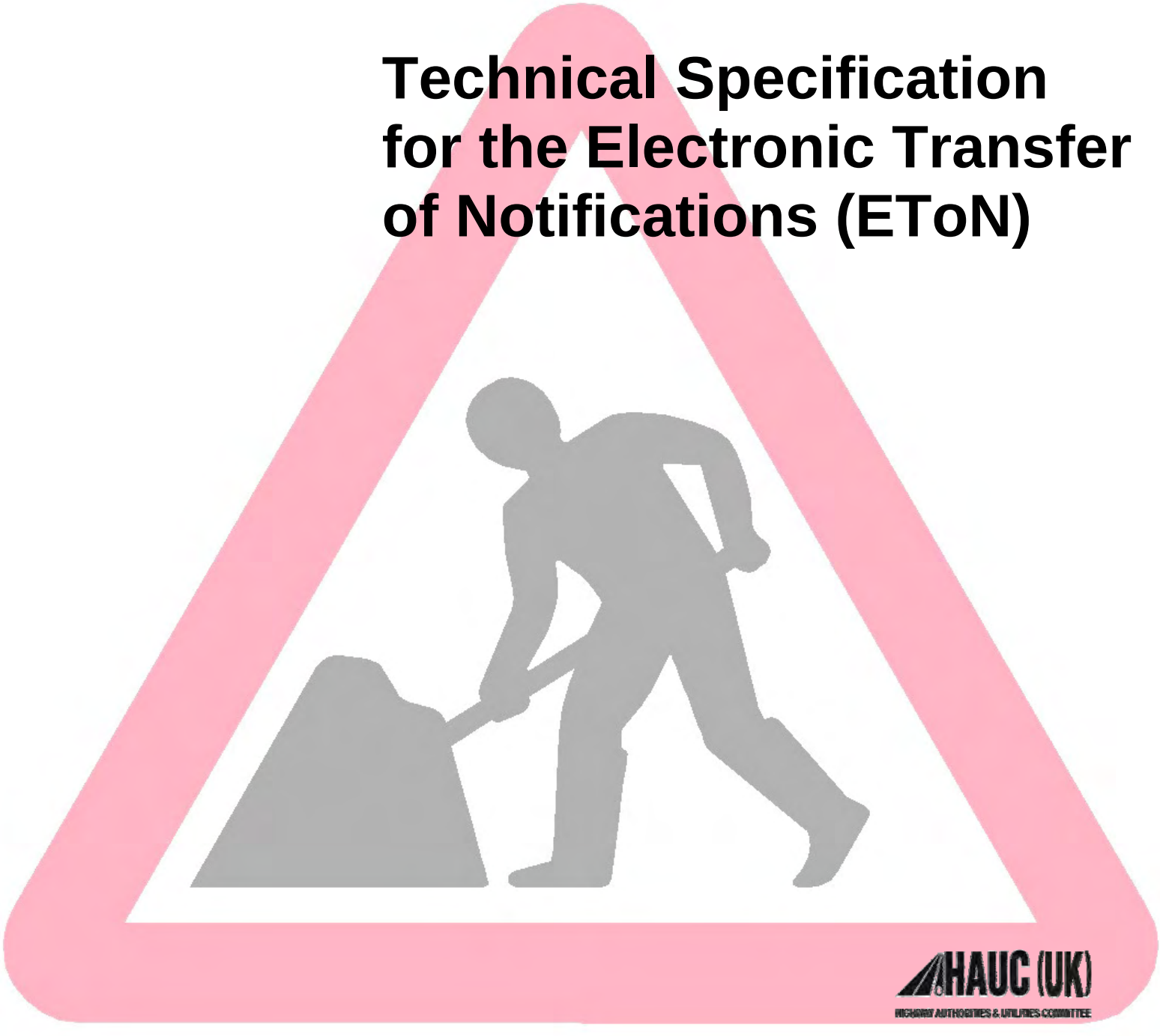
Department for Transport

Technical Specification
Version 5.0.1
December 2008

New Roads and Street Works Act 1991

Technical Specification for the Electronic Transfer of Notifications (EToN)



HAUC (UK)
HIGHWAY AUTHORITIES & UTILITIES COMMITTEE

Technical Specification for the Electronic Transfer of Notifications - Version 5.0.1

December 2008

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DOCUMENT CONTROL

Current version

Date	Version	Status	Editor	Comment
14 April 2008	5.0	Final	ETonN Developers Group	Permits version

Change history

Date	Version	Status	Editor	Comment
16 Feb 2008	5.0	Draft	ETonN Developers Group	Permits version
01 Dec 2008	5.0.1	Draft	ETonN Developers Group and LGIH	Introduction of DFT 7.1 format for LSG upload and download

Some of these changes will affect technical implementation and interoperability. It is essential that software developers carefully review the current release to ensure that all significant changes are identified. Please contact DfT if in any doubt at streetworks.queries@dft.gsi.gov.uk.

GLOSSARY

American Standard Code for Information Interchange (**ASCII**)	Character encoding based on the English alphabet. ASCII codes represent text in computers, communications equipment, and other devices that work with text. The first edition of the standard was published in 1963; there was a major revision in 1967 and the most recent update was in 1986. It currently defines codes for 128 characters: 33 are non-printing, mostly obsolete control characters that affect how text is processed, and 95 are printable characters. Most modern character encodings, which support many more characters, have a historical basis in ASCII.
Additional Street Data (**ASD**)	Used to provide additional street attribute data such as reinstatement categories for the NSG. ASD is held on the NSG Concessionaire's website alongside the NSG.
BS7666	British Standard relating to spatial datasets for geographical referencing. BS7666 Part 1 provides a specification for a street gazetteer.
Central register	A register covering two or more street authority areas that is maintained by one single authority, the 'register authority'. For example, a central register could include all authorities in a metropolitan area.
Co-ordination Code of Practice	Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters
Data model	A generalised, user-defined view of data representing the real world.
Dataset	A set of data that share common characteristics and that are managed as a subset of the data within a database.
DEC-NSG	Current version of the Data Entry Conventions and Best Practice for the National Street Gazetteer, published by the Local Government Information House (LGIH) as part of the Improvement and Development Agency (IDeA).
DTF 7.1	Current version of the National Street Gazetteer Data Transfer Format, published by the Local Government Information House (LGIH) as part of the Improvement and Development Agency (IDeA).
Demilitarised Zone (**DMZ**)	In computer networks, a DMZ is a computer host or small network inserted as a 'neutral zone' between a company's private network and the outside public network. It prevents outside users from getting direct access to a server that has company data. A DMZ is an optional and more secure approach to a firewall and effectively acts as a proxy server as well.
Digital National Framework (**DNF**)	DNF is an industry standard for integrating and sharing business and geographic information from multiple sources (www.dnf.org).
e-Government Interoperability Framework **(e-GIF)**	The e-GIF defines the technical policies and specifications governing information flows across government and the public sector. They cover interconnectivity, data integration, e-services access and content management. The associated technical policies and specifications are contained in the Technical Standards Catalogue (TSC).
EToN	Electronic Transfer of Notices
EToN 3	Refers to all versions of EToN up to and including EToN 3, where notice data was exchanged via FTP in "Appendix E" format
EToN 4	The version of EToN that first introduced the use of Web Services for notification exchange.

ETоN 5	The current version of ETоN as defined in this specification
eXtensible Markup Language (XML)	XML is a general-purpose markup language used on the Internet to describe contents of documents, datasets and other entities. It is classified as an extensible language because it allows its users to define their own tags. Its primary purpose is to facilitate the sharing of data across different information systems, particularly via the Internet. It is a simplified subset of the Standard Generalized Markup Language (SGML), and is designed to be relatively human-legible.
File Transfer Protocol (**FTP**)	A standard internet application protocol which allows a user on one computer to transfer files to and from another computer over a TCP/IP network (e.g. Internet).
Firewall	A system designed to prevent unauthorised access to or from a private network. Firewalls can be implemented in both hardware and software, or a combination of both. Firewalls are frequently used to prevent unauthorised Internet users from accessing private networks connected to the Internet, especially intranets. All messages entering or leaving the intranet pass through the firewall, which examines each message and blocks those that do not meet the specified security criteria.
Gazetteer	A list of spatial entities held in computer or printed form, such as properties or streets, which allows for rapid search or query.
Hypertext Transfer Protocol (**HTTP**)	A standard internet application protocol used for communication between web servers and clients.
Internet Service Provider (ISP)	An ISP is a business or organisation that provides Internet access and related services to consumers (and other ISPs). ISPs use a wide range of communications technologies to allow customers to connect to their network. For medium-to-large businesses, this includes high-bandwidth technologies such as SHDSL, Ethernet, Gigabit Ethernet, Frame Relay, ATM, satellite Internet access and SONET.
Level (1, 2, or 3) gazetteer	The type of street centre line geometry implemented in a street gazetteer, as defined in BS7666. Level 3 provides full link/node geometry.
Local register	A register that is maintained by a single street authority for their own geographic area and will include information on all streets.
Local street gazetteer (**LSG**)	A spatial dataset based on BS7666 containing details of all streets in a local highway authority area. It is created and maintained by the local highway authority regardless of maintenance responsibility for the streets.
National Grid	A metric grid based on the Transverse Mercator Projection developed by Ordnance Survey in 1936 for use in Great Britain. Referred to as OSGB36, it is the de facto standard projection for display of UK based mapping.
National Grid Reference (**NGR**)	The British National Grid reference system is 2D only, so consists of an easting and a northing coordinate.
Nationally consistent street gazetteer (**NSG**)	A set of LSGs forming a seamless national dataset.
Notice management system (**NMS**)	An ETоN-compliant computer application for use by undertakers and street authorities in England and Wales to exchange and manage NRSWA notifications and related information.
NSG Custodian	The body appointed to manage the NSG on behalf of local highway authorities.

Port	Ports are typically used to map data to a particular process running on a host computer. In TCP each packet header will specify a source port and a destination port, as well as the source and destination IP addresses. A process may 'bind' to a particular port to send and receive data, meaning that it will listen for incoming packets whose destination port matches that port number, and/or send outgoing packets whose source port is set to that port number. By default, HTTP uses port 80.
Primary Notice Authority	The Street or Permit Authority responsible for the coordination of Street Works on the specified street or part street. In the case of Private Streets this is the Local Highway Authority whose area covers the Private Street.
Proxy server	A server that acts as an intermediary between a client and the server the client wants to access. It is the proxy server that makes the request to the server of interest and passes back the response to the client. A proxy server may alter the client's request or the server's response and may service the request without contacting the specified server. The proxy server effectively hides the true network addresses.
Schema	In general, a schema is an abstract representation of an object's characteristics and relationship to other objects. An XML schema represents the interrelationship between the attributes and elements of an XML object (for example, a document or a portion of a document).
Simple Object Access Protocol (**SOAP**)	SOAP is an XML-based communication protocol for accessing a web service over HTTP. It is used to send messages and exchange information between applications. SOAP provides a way to communicate between applications running on different operating systems, with different technologies and programming languages. The first public working draft on SOAP was published by WC3 in December 2001.
Street events Data Exchange Protocol (**SDEP**)	A common data exchange protocol for street works registers and other systems handling street events data. It comprises an XML data schema and web service WSDL for exchanging information about street works, road works and street events between systems.
Transmission Control Protocol/Internet Protocol (**TCP/IP**)	The Transmission Control Protocol (TCP) is one of the core protocols of the Internet protocol suite, often referred to as TCP/IP. Using TCP, applications on networked hosts can create connections to one another, over which they can exchange streams of data using Stream Sockets. The protocol guarantees reliable and in-order delivery of data from sender to receiver. TCP also distinguishes data for multiple connections by concurrent applications (e.g. web server) running on the same host.
Unicode Transformation Format (**UTF**)	Unicode is an industry standard allowing computers to consistently represent and manipulate text expressed in any of the world's writing systems. Developed in tandem with the Universal Character Set (UCS) standard, Unicode consists of a repertoire of about 100,000 characters, a set of code charts for visual reference, an encoding methodology and set of standard character encodings, an enumeration of character properties such as upper and lower case, a set of reference data computer files, and a number of related items, such as character properties, rules for text normalization, decomposition, collation, rendering and bidirectional display order (for the correct display of text containing both right-to-left and left-to-right scripts). UTF-8 (8-bit UCS/Unicode Transformation Format) is a variable-length character encoding for Unicode. It is able to represent any character in the Unicode standard, yet the initial encoding of byte codes and character assignments for UTF-8 is backwards compatible with ASCII (single byte). The standard has been implemented in many recent

	technologies including XML.
Uniform Resource Locator (**URL**)	URL is a widespread synonym for Uniform Resource Identifier (URI). The idea of a uniform syntax for global identifiers of network-retrievable documents was the core idea of the World Wide Web. RFC 1630 formally defined the term "URI" as a generic term best suited to the concept.
Unique Street Reference Number (**USRN**)	A unique identifier for a street as defined in BS7666.
Universal Description, Discovery, and Integration (**UDDI**)	An XML-based registry for businesses worldwide to list themselves on the Internet. Its ultimate goal is to streamline online transactions by enabling companies to find one another on the Web and make their systems interoperable for e-commerce.
Web Services Description Language (**WSDL**)	An XML-based language used to describe the services a business offers and to provide a way for individuals and other businesses to access those services electronically.
Works Data Alteration	Notification used to describe changes that need to be made to works data transmitted in previous notifications
Works Stop	Notification used in EToN to indicate that the promoter is no longer occupying the highway. Serves the purposes of both the Works Clear and Works Closed notice described in the legislation.
World Wide Web Consortium (**W3C**)	W3C is an international consortium where member organisations, a full-time staff, and the public work together to develop Web standards. W3C has published more than ninety such standards, called W3C Recommendations. By publishing open (non-proprietary) standards for Web languages and protocols, W3C seeks to avoid market fragmentation and thus Web fragmentation.
XML Schema Definition (**XSD**)	XSD, a Recommendation of the World Wide Web Consortium (W3C), specifies how to formally describe the elements in an Extensible Markup Language (XML) document. This description can be used to verify that each item of content in a document adheres to the description of the element in which the content is to be placed.
XML Signature	XML Signature defines the syntax and processing rules for creating digital signatures on XML content. It is a joint effort between the World Wide Web Consortium (W3C) and Internet Engineering Task Force (IETF).

1.INTRODUCTION

1.1General

This document provides a technical specification for a new EToN (Electronic Transfer of Notifications) system, to be known as the Technical Specification for the Electronic Transfer of Notifications - Version 5, aimed primarily at software developers. It is intended as a standalone document that replaces the related technical appendices in the previous *Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters*. This document also replaces the Electronic Transfer of Notices Technical Specification published in October 2007. Later revisions of this document will replace Appendix E of the existing Inspections Code of Practice.

This specification should be read in conjunction with the following:

- The Street Works (Registers, Notices, Directions and Designations) (England) Regulations 2007;
- The Street Works (Fixed Penalty) (England) Regulations 2007;
- The Street Works (Charges for Unreasonably Prolonged Occupation of the Highway) (England) Regulations 2008;
- Code of Practice for the Co-ordination of Street Works and Works for Road Purposes and Related Matters 2007.
- Traffic Management Permit Scheme (England) Regulations 2007
- Statutory Guidance for Permits
- Code of Practice for Permits

This specification provides additional explanation and detail that should also be helpful to end users and others.

EToN exchange in accordance with this version of the Technical Specification should begin from 1 April 2009. The main change relates to data exchange of local street gazetteers (LSG) with the National Street Gazetteer (NSG) hub to comply with the distribution of BS7666:2006 level 3 data from 1st April 2009 using the DFT 7.1 transfer format. Gazetteers must be created in accordance with the Data Transfer Format document (DFT 7.1) and should follow the guidance given in the NSG Data Entry Conventions document (DEC-NSG); both are available from the NSG Custodian. As a transitional measure the legacy format of the gazetteers will also be available from the NSG website until 31 March 2010. This should enable users of gazetteers to migrate to the DFT 7.1 format at the optimum time for them.

In order to retain readability within the document, whilst accommodating the requirements for both notices and permits, the word “notifications” (except where otherwise qualified) should be interpreted to mean the transactions that are used throughout the life-cycle of both Street Works Noticing and Street Works Permits regimes.

1.2Purpose

This technical specification and associated XML schemas (discussed below) are intended to allow the development of NRSWA-compliant, interoperable notice management systems (NMS) and related gazetteer management systems (GMS) by commercial EToN software developers, in-house developers and others. This document is also concerned with interoperability of business processes and procedures involving many separate and diverse organisations. System interoperability is to be achieved by compliance with specified protocols as indicated in Figure 1.1.

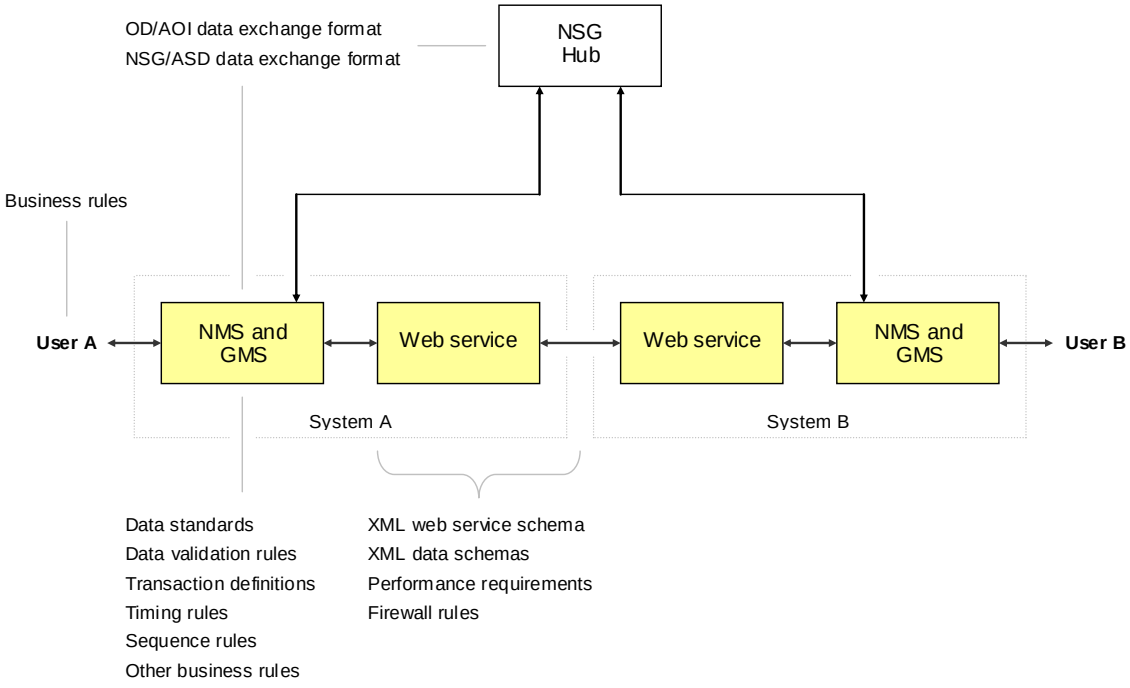


Figure 1.1 ETON 5 system interoperability

This document aims to provide a clear and comprehensive specification to ensure correct and consistent interpretation. It should be read in conjunction with the Regulations and Codes of Practice and other relevant documents to ensure that all statutory, policy and other technical requirements are met.

XML schemas have been developed for notifications based on the EToN protocols defined in this technical specification. The schemas will comply with all relevant e-Government XML standards and will be approved for use across government. The XML schemas will be published on the GovTalk website and can be accessed at the following location:

http://www.govtalk.gov.uk/schemasstandards/schemalibrary.asp

Information on the status of the schemas and the expected publication date will initially be provided on the GovTalk website.

The specification and schemas will be revised in future to include additional and modified requirements as implementation of the TMA progresses and other aspects of the legislation are developed.

Note that this document does not provide a complete specification for notice management systems and street works registers. One vendor may choose to include an item because the vendor feels that it enhances the product while another vendor may omit the same item. An implementation which does not include a particular option must be prepared to interoperate with another implementation which does include the option, though perhaps with reduced functionality. In the same way an implementation which does include a particular option must be prepared to interoperate with another implementation which does not include the option (except, of course, for the feature the option provides). However, both the schema and the associated noticing rules enforce statutory requirements, and it is the responsibility of all to ensure that the minimum mandatory requirements for noticing are met.

1.3Change management

The development and implementation of new, interoperable EToN web-based systems is a complex, national information systems IT project involving many different software vendors, user organisations and other interested parties. This Technical Specification will therefore remain a 'living' document during the initial development, testing and commissioning stages (and beyond).

A formal change management process has been established to support the development of EToN. This will involve the following:

- Registration of software developers and others.
- Formal submission of change requests, e.g. reporting mistakes, omissions, ambiguous requirements, need for additional rules etc. Logging of all change requests and issues.
- Classification and authorisation of changes.
- Change development – prioritise and resolve following consultation with stakeholders, including software developers.
- Release management - distribution of errata and/or revised sections or full document as appropriate to all registered parties.
- Ongoing review.

It is important that all software developers and system suppliers register.

All registrations and change requests should be submitted to DfT via e-mail at streetworks.eton@dft.gsi.gov.uk.

1.4Content

The technical specification consists of 10 sections (including this section). The remaining sections are as follows:

Section 2 describes the overall scope of EToN and in particular defines the scope of the implementation version 5.

Section 3 describes the overall notification requirements, including all core statutory and non-statutory notifications, and the new concepts and features to be supported by EToN including submission of forward planning information, Works Data Alteration, voluntary cancellation of works and notifications, exchange of works comments, attachments to notifications, delivery of FPNs and others.

Section 4 provides a basic data model for EToN 5 to meet the overall requirements identified in the previous sections, and includes detailed definitions of all associated data, highlighting the key attributes used for referencing.

Section 5 specifies the content and structure of each EToN 5 notification to meet the notification requirements identified in section 3, based on the underlying data definitions in section 4.

Section 6 defines the rules for determining which organisations can send and receive particular notifications, and the methods of deriving the necessary address data.

Section 7 specifies the required operation of XML web services to support the transfer of notifications and other transactions defined in section 5, including related performance and security requirements.

Section 8 specifies timing and sequencing rules for EToN notifications, including illustrative examples.

Section 9 specifies the requirements for ‘paper’ notifications in accordance with sections 4 and 5, to meet statutory requirements.

Section 10 defines the street and other data necessary to support the operation of EToN 5, and specifies the data transfer requirements between street works organisations and the central NSG Hub.

1.5Definitions

The key words "must", "must not", "required", "shall", "shall not", "should", "should not", "recommended", "may", and "optional" used in this document are to be interpreted as follows:

The word “**must**” or the terms "**required**" or "**shall**", mean that the definition is an absolute requirement of the specification.

The phrase “**must not**” or "**shall not**" mean that the definition is an absolute prohibition of the specification.

The word “**should**” or the adjective "**recommended**" mean that there may exist valid reasons in particular circumstances to ignore a particular item, but the full implications must be understood and carefully weighed before choosing a different course.

The phrase “**should not**” or "**not recommended**" mean that there may exist valid reasons in particular circumstances when the particular behaviour is acceptable or even useful, but the full implications should be understood and the case carefully weighed before implementing any behaviour described with this label.

The word “**may**” or the adjective "**optional**" mean that an item is truly optional.

Note that “should” is used in relation to the operation of notice management systems and associated input data validation requirements to mean that users are expected to comply with statutory requirements and recommendations in the Code of Practice but it has to be assumed that they will not always do so in practice.

The term notifications covers exchanges of information between promoters and authorities, including notices, permits, directions, restrictions, etc. Where notices is used it refers to the notice regime under NRSWA, as amended by TMA and associated Regulations only. Permits means this is a requirement of permit scheme Regulations made under Part 2 of Traffic Management Act.

2. SCOPE OF THE NEW ETON SYSTEM

2.1 General

This technical specification spans the waves of secondary legislation for both noticing and permit regimes within the TMA. It will be extended in future to support the remaining TMA provisions as work progresses to develop the necessary secondary legislation and codes of practice (see below).

As in previous EToN systems, the scope includes real-time transfer of notifications and periodic exchange of 'fixed' street and organisation data with the central NSG Hub necessary to support the EToN process. Substantial changes are required in both of these areas. In order to reduce the amount of work and timescales involved in the initial implementation, some changes relating to NSG and ASD data will be delayed until a later stage(s).

The resulting scope of EToN 5 is shown in Figure 2.1. This can be viewed as a temporary 'hybrid' solution involving parallel operation of both new and existing components.

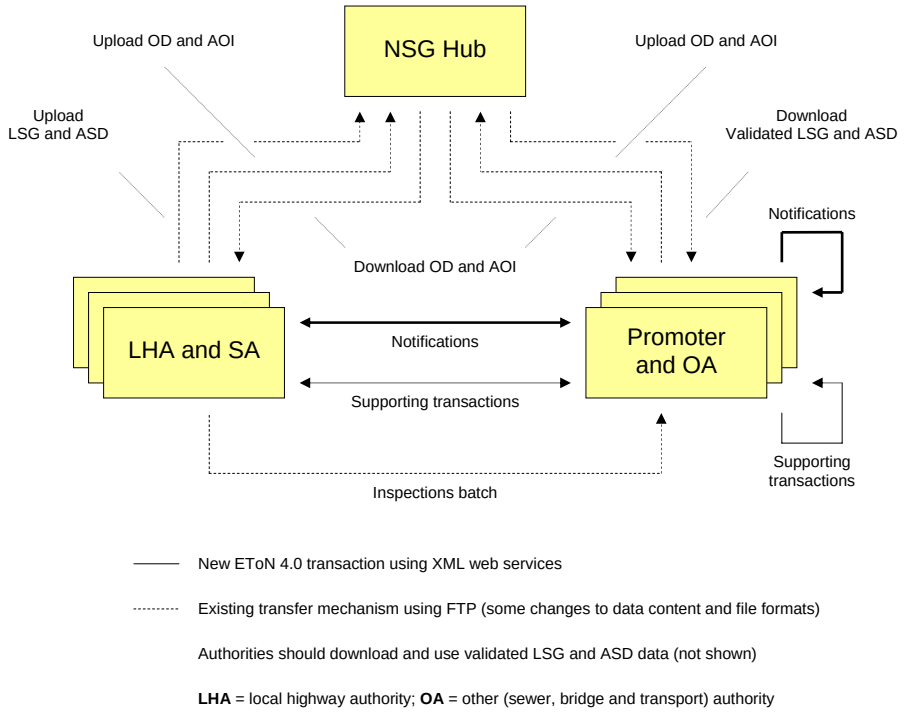


Figure 2.1 Overview of EToN 5 data flows

These data flows include:

1. Exchange of notifications between works promoters (statutory undertakers, street works licensees and highway authorities), street authorities (excluding private street managers) and other relevant (sewer, bridge and transport) authorities. Promoters also copy notifications to other interested promoters and authorities. As mentioned in Section 1, notifications implies all the data interchanges necessary for both Street Works Noticing and Street Works Permit regimes.

2. Exchange of inspections data between street authorities and undertakers.

3. Exchange of organisation and operational districts (OD) and area of interest (AOI) data between promoters and authorities.

4. Upload of Local Street Gazetteer (LSG) and Additional Street Data (ASD) data by local highway authorities to the central NSG Hub. Upload of ASD by street authorities where they are not the local highway authority (i.e. the Highways Agency, Transport for London and Network Rail). Upload of Trunk Road Street Gazetteer (TRSG) data by the Highways Agency. Note that LSG and ASD uploads must be supplied in DTF 7.1 format

5. Download of validated NSG and ASD data by all users according to their area of interest. Downloads are provided in DTF 7.1 format and will also be made available in the legacy format described in section 10 until 31 March 2010.

The new and existing components are summarised in Table 2.1

Table 2.1 Scope of EToN 5

Flow	Status	Transfer method	Applicable standard
Notifications (notices and directions, permit applications, restrictions etc.)	New	XML web services	This document
Attachments to notifications	New	Indirectly via a web server	This document
Direct exchange of OD and AOI data via EToN	New	XML web service	This document
Upload and download OD and AOI data to/from Hub	Modified OD and AOI content	Transfer files in XML format via existing website using FTP	This document
Inspections data	Existing EToN 3 format	Transfer batch text files using FTP	Appendix E of the Code of Practice for Inspections - Second Edition 2002
LSG and ASD upload	New	Transfer CSV batch files via existing website using FTP	DTF 7.1 and the DEC-NSG (BS7666-1: 2006)
NSG and ASD download	New. Existing EToN 3 format with some minor changes to data content available until 31 March 2010	Transfer CSV batch files via existing website using FTP	DTF 7.1 and the DEC-NSG (BS7666-1: 2006) This document for legacy download format

This specification should be read in conjunction with the Appendix E of the Code of Practice for Inspections - Second Edition 2002.

2.2Scope of EToN 5

The scope of information exchange within EToN is wider than hitherto. The main changes include the following:

- Statutory and non-statutory notifications and responses for Street Works Noticing regimes.
- Statutory and non-statutory notifications and responses for Street Works Permit regimes.
- Notification of all registerable road works by highway authorities using exactly the same process as undertakers.
- Cancellation of works and particular notifications, and Works Data Alteration.
- Facility to send FPNs, if required.
- Exchange of textual comments linked to works by any interested party.
- Submission of forward planning information for Major works, and subsequent updating.
- Improved support for delivery of notifications to other undertakers and authorities, and for copying notifications and responses to interested parties.
- Use of NSG Level 3 data.
- Sending of attachments with notifications (e.g. digital photographs of reinstatements).
- Notice of intention to issue a street works licence (s50).
- Unattributable works notice/response notice.

Notice and gazetteer management systems for use in Wales **must** recognise the bi-lingual nature of the underlying NSG/ASD data and allow the Welsh language to be fully and correctly represented in notifications (see requirements for character encoding in sections 4.6 and 10.5).

The following areas are **not included** in ETOoN 5:

- Notices of proposed designations, and responses.
- Undertakers obtaining consent to carry out works during a restriction. Note: The appropriate agreements defined in 4.7.4 should still be recorded in notifications.
- Undertakers obtaining consent from a street authority for placing apparatus in a protected street (s61). The appropriate agreements defined in 4.7.4 should still be recorded in notifications.
- Undertakers submitting plans and sections and obtaining SED approval.

- Sending of s85 diversionary works notices by street authorities (any subsequent works carried out in response will be notified in the normal way using EToN).
- Applications for s50 licences.
- Full support for notices in relation to s81 (duty to maintain apparatus).
- Providing access to EToN for private street managers, s50 licensees, bridge and transport authorities and others, e.g. access to EToN web services via an EToN website using a standard web browser interface.
- Notifications related to non-works activities, e.g. licences for skips and scaffolding, traffic orders for special events etc.
- Access to local or central registers for planning purposes.
- Transfer of NSG/ASD data on a change-only basis.
- A mechanism to allow undertakers and other interested parties to express interest in particular streets (to complement AOI).
- Full implementation of XML web services, in particular secondary validation of notification data (in addition to 'front-line' XML schema validation) and error reporting.
- Including attachments within XML messages.

It is intended that some of the above areas will be addressed as part of future revisions of EToN, the revised Code of Practice for inspections and other TMA provisions. In the meantime, paper notifications or other 'off-line' methods should be used where required.

The above NSG-related changes (and other areas) will be implemented in a future revision(s) of EToN.

The scope may also be extended in future to include access to information held on registers in order to assist works promoters in planning and co-ordinating works (i.e. before submitting a notification). Note that the existing Street events Data Exchange Protocol (SDEP) XML web service is designed to provide only limited summary street works information to the public.

3.GENERAL NOTIFICATION REQUIREMENTS

3.1General

This section defines the overall requirements for communications between stakeholders. The resulting EToN protocol is described in later sections.

The term “notification” is used hereafter in a generic sense to include all NRSWA and Permit related EToN transactions.

The main NRSWA provisions, as amended by the TMA, to be supported by EToN 5 are as follows:

1. Sending of statutory and non-statutory works-related notices by undertakers.

2. Registration of highway works by highway authorities using the same notification process as (1).

3. Sending of directions and other statutory and non-statutory notices by street authorities in relation to (1).

4. Sending of directions and other statutory and non-statutory notices by street authorities in relation to s58 and s58A restrictions.

5. Sending of other statutory and non-statutory notices by street authorities and relevant authorities.

6. Delivery of Fixed Penalty Notices (FPNs) to undertakers.

The additional provisions for permitting are summarised as follows:

1. Applications for Provisional Advanced Authorisations (PAAs) and Permits by promoters

2. Applications for Permit Variations by Promoters

3. The Granting, Refusal and Revoking of Permits by permit authorities

As previously, the underlying requirements also relate to the emergency procedures of other organisations, inspection and charging regimes, records for reinstatement guarantee purposes, and confirming who has worked at a particular location.

This section also describes additional notification types and other features relating to forward planning information, works and notification cancellation, Works Data Alteration, attachments and comments that will be used in conjunction with the above NRSWA and Permit notifications. The overall aim is to provide better information to help improve co-ordination.

3.2Determination of the appropriate notification regime

With the introduction of Permit Schemes systems will need to be able to define if a particular Works is subject to the existing NRSWA Noticing rules or a Permit Scheme. For those Authorities implementing a Permit Scheme it will be necessary for them to define a specific District as the permit Authority. This District will be identified as a Permit Authority through its

OD File (DistrictFunction = 9). All streets that are subject to the Permit Scheme will then have their NSG Additional Street Data record specifying the Permit Authority as the SWA_ORG_REF_AUTHORITY and DISTRICT_REF_AUTHORITY.

In the case of a joint Permit Scheme it is possible that an Authority's NSG will have a different Authority specified in their Additional Street Data record as the SWA_ORG_REF_AUTHORITY.

It is likely that the OD information for a Permit Authority will be made available before the permit scheme itself becomes active. In this case NRSWA notices should continue to be sent to the primary notice authority for the street until the permit scheme goes live. Note that, as for notice transition from EToN 3 to EToN 4, works phases that started life under one regime should continue under that regime until the Actual Stop / Registration of that phase **provided that** the date on which the activity is planned to start on site is not more than one month (for standard, minor and immediate activities) or three months (for major activities) after the regime changeover date. A works phase with a proposed start that falls after this date should be cancelled, and a New Activity notice submitted under the new regime in accordance with the rules detailed within this specification

The DfT will provide information on the go-live dates, fees and other information relating to each permit scheme and users will need to ensure that this information is incorporated into their systems in a timely fashion. A mechanism for the electronic exchange this Permit Scheme metadata may be considered in a future version of this technical specification.

3.3Submission of notifications by highway authorities

Under NRSWA, EToN systems must allow highway authorities to notify all registerable road works activities using the same process as statutory undertakers. This involves the same notification types as undertakers (defined later). There are no statutory responses from street authorities to these notifications (from highway authorities), although the works comments facility (see below) can be used if required to respond to a notification and provide a record. Cancellations and Works Data Alterations will also apply to submission of notifications by highway authorities.

Separate operational districts should be defined (see section 4.7.15) in order to separate the works promoter (works department) and street authority (traffic manager) functions within local highway authorities.

Note that under a Permit regime highway authorities must apply for PAAs and Permits in exactly the same way as statutory undertakers.

3.4Works categories

All planned works are classified by the duration of the works as shown in the following table. Immediate (Emergency and Urgent) works can be of any duration. The durations are in working days (see definition in section 8).

These categories apply to street works and are also used for registering road works.

Category	Duration (days)
Major	>10
Standard	4-10
Minor	<4

Planned works can also be classified as Major works if any of the following criteria are met, irrespective of duration:

1. Works that are identified in an undertaker's annual operating programme or are normally planned or known about at least six months in advance of the proposed start date.

2. Any works that are subject to an order under s14 of the Road Traffic Regulations Act 1984.

The following rules also apply to undertakers:

1. Planned interim to permanent reinstatement works cannot be classified as Immediate.

2. Remedial works cannot be classified as Urgent.

Notice management systems should apply the above rules to ensure that, as far as possible, the correct works category is always identified when creating a notification.

3.5 Summary of notification requirements

The new regime requires more formal notifications and information exchange via EToN to enable improved management and co-ordination of street and road works. A list of the resulting notifications (i.e. within the scope of EToN 5) is provided in Table 3.1, including both statutory and non-statutory requirements as indicated.

The Originator column indicates which type of organisation may send this type of notification: **P** = promoter (undertaker or highway authority), **R** = relevant authority, **A** = street / permit authority, **U** = undertaker. Submission of NRSWA notices by highway authorities is not a statutory requirement (see section 1.1).

Explanations of how the EToN notifications support the corresponding NRSWA / Permit requirements are provided where appropriate in the transaction definitions in section 5.

Note that in the remainder of this document the notification name is used rather than NRSWA section number. This is also to emphasise that particular works notifications apply to all works promoters, i.e. undertakers and highway authorities.

Table 3.1 List of Notification requirements

Applic-ability	NRSWA Section No. or CoP requirement. Permits CoP or Regulatory requirement	Statutory	EToN notification name	Originator
Both	Forward planning information	N	Forward Planning Information	P
Notices	S54(1) advance notice of Major works	**Y**	Initial Notice	P
Notices	S55(1) notice of starting date of works (Standard, Minor and Urgent works) incl. planned remedial works	**Y**		
Notices	S57 Notice of Emergency works (incl. remedial)	**Y**		
Notices	S58A Schedule 3A 2(1)(d) notice of starting date of works in response to notice of proposed restriction	**Y**		
Notices	S55(1) notice of starting date of works under s58 and Regulation 9(3) in response to notice of proposed restriction	**Y**		
Permits	Provisional Advanced Authorisation Applications. Reg. 10, 11, 14, 30(1), 33	Y	PAA (Major) / Permit Application (Non-major)	P
Permits	Permit Applications: Reg. 11, 33			

Applic-ability	NRSWA Section No. or CoP requirement. Permits CoP or Regulatory requirement	Statutory	ETON notification name	Originator
Notices	S55(1) Notice of starting date of works (Major)	**Y**	Confirmation Notice	P
Permits	Variations Initiated by the Activity Promoter. Reg. 15	Y	Variation Application	P
		Y	Duration Variation Application (Works in Progress)	P
			Works Data Variation (Works in Progress)	P
Both	S74 / S74A notice of Actual Start Date	**Y**	Actual Start Date	P
Notices	S74(3) and (4) Revised duration estimate	**Y**	Revised Duration Estimate	P
Notices	S74(4) In-progress revised duration estimate	**Y**		
Both	S74(5C) / S74A Works Clear	**Y**	Works Stop	P
Both	S74(5C) / S74A Works Closed	**Y**		
Both	S70(3) / S70(4A) Completion of reinstatement (interim and permanent)	**Y**	Partial Registration	P
			Full Registration	P
			Bar Hole Registration	U
Both	Voluntary cancellation of works/phase	N	Cancellation	P/ A
Notices	S54(4A) confirmation of non-issue of S55(1) notice	**Y**		
Notices	S55(8) confirmation of works not starting	**Y**		
Both	Notice cancelling S58 proposed restriction	N		
Both	Notice cancelling S58A proposed restriction	N		
Both	Notice revoking s58A Schedule 3A 4 restriction	**Y**		
Permits	Cancelling a Permit. Reg. 15(3)	Y		
Both	Reversion of Actual Start Date notice	N	Revert Actual Start	P
Both	Reversion of Works Clear/Closed notice	N	Revert Works Stop	P
Both	Error Correction	N	Error Correction (Work in Progress)	P
Both	S74(3) and (4) Duration estimate challenge	**Y**	Duration Challenge	A
Both	S74(3) and (4) In-progress revised duration estimate challenge	Y		
Both	S74 Duration estimate challenge non-acceptance	N	Duration Challenge Non-acceptance	P
Both	S74 In-progress revised duration estimate challenge non-acceptance	N		
Both	Informal overrun warning	N	Informal Overrun Warning	A
Notices	S56(1) Direction as to timing of street works (proposed)	**Y**	Directions on Timing	A
Notices	S56(1A) Direction as to timing of street works (subsisting)	**Y**		
Notices	S58A Schedule 3A 3 Direction on starting date	**Y**		
Notices	Cancellation of directions	N		
Notices	S56A Direction as to location of new apparatus	**Y**	Direction on Placing Apparatus	A
Notices	S56A Notice revoking s56A direction	**Y**		
Notices	S66(3) notice to discontinue or mitigate a delay or obstruction	**Y**	Undue Delay	A
Permits	Grant Provisional Advanced Authorisation. Reg. 16	Y	Grant PAA	A
Permits	Grant Permit: Reg. 16	Y	Grant Permit	A
Permits	Grant Permit Variation: Reg. 15	Y	Grant Permit Variation	A
Permits	Provisional Advanced Authorisation Refusal: Reg. 16	Y	Refuse Permit / PAA / Variation	A
Permits	Permit Refusal. Reg. 16			
Permits	Variation Refusal. Reg. 15			
Permits	Revoking a Permit. Reg. 15(3)	Y	Revoke Permit (Proposed Works)	A
Permits	Variations Initiated by the Permit Authority: Reg. 15	Y	Authority Imposed Variation	A
Both	S58(1) notice of proposed restriction on street works following substantial road works	**Y**	Proposed Restriction (Road Works)	A
Both	S58 Notice stating that substantial road works have been completed and a s58 restriction is in force	N	Restriction In Force (Road Works)	A
Both	S58A Schedule 3A 2 Notice of proposed restriction on works following substantial street works	**Y**	Proposed Restriction (Street Works)	A
Both	S58A Schedule 3A 4 Direction restricting further works	**Y**	Restriction in Force (Street Works)	A

Applic-ability	NRSWA Section No. or CoP requirement. Permits CoP or Regulatory requirement	Statutory	ETON notification name	Originator
Both	S50 and Schedule 3 notice of intention to issue a street works licence	**Y**	Intention to Issue a Street Works Licence	A
Both	S81(6) Inspection or remedial works to defective apparatus (in conjunction with Inspections)	**Y**	Unattributable Works	R/ A
			Unattributable Works Response - Acceptance	P
			Unattributable Works Response – Non-Acceptance	P
Both	S95A and schedules 4A and 4B Fixed Penalty Notice	**Y**	Fixed Penalty Notice	A
Both	S95A and schedules 4A and 4B notice withdrawing the Fixed Penalty Notice	**Y**	Fixed Penalty Notice Withdrawal	A
Both	FPN Comments	N	FPN Comments	P/ A
Both	Works Comments	N	Works Comments	P/ R/ A

Note: Whilst this table may reflect the legal requirements, it does not define the minimum requirements for systems to work. It should not be used as the only basis for determining electronic notification requirements, validation and sequencing rules.

3.6 Variation and revocation of directions and restrictions

NRSWA provides limited powers for varying or revoking directions as indicated in Table 3.1 and as summarised in the following table.

Table 3.2 Directions and restrictions that can be amended

Direction, restriction or notice	Vary	Revoke	Comments
S56 direction on timing - proposed works	N	N	Only one direction is allowed per works phase except in the case of Major works where a direction can be given in response to the initial notice and a further direction can be given in response to the confirmation notice if circumstances have changed significantly. An authority may subsequently issue a s56(1A) direction to change the times if necessary.
S56(1A) direction on timing - subsisting works	N	N	Can only be given once works have started (and possibly before the notice of Immediate works or actual start date has been received) and the impact of the works is greater than was anticipated at the time that the initial notice was considered by the authority, or the circumstances have changed.
S56A direction on location of new apparatus	**Y**	**Y**	A direction may have to be revoked if an undertaker is unable to locate new apparatus in a different street. A s56A direction can be varied, e.g. if it relates to a specific part of a street.
S66	N	N	A notice requiring an undertaker to take steps as specified in the notice to mitigate or discontinue the obstruction.
S58 restriction following substantial road works	N	N	An authority has the power to direct the timing and order of execution of street works by the use of s56 and s56(1A) directions. However, different timing rules apply in this situation as the authority may not wish to direct works to start until it knows that the previous works will finish in time (see section 8).
S58A Schedule 3A 3 works direction	N	N	S58A includes powers to direct. In practice this operates in the same way as s58 above.

S58A Schedule 3A 4 restriction in force following substantial street works	N	**Y**	A restriction may be revoked at any time. There are no powers to vary a restriction under s58A.

However, note that EToN will allow an authority to amend any directions and restrictions if they were sent by mistake or contained errors (see section 3.11). This is done by re-sending the previous transaction in its entirety with modified contents (including the possibility of no contents to withdraw a Direction). Developers may wish to provide appropriate safeguards to help ensure that directions and restrictions which cannot be legally varied are only resent for correction purposes.

3.7 Processes for restrictions under s58 and s58A

The processes for restrictions following substantial road works (s58) and substantial street works (s58A) are very similar:

1. Where a street authority wishes to impose a restriction following road works or street works, the street authority should serve a Proposed Restriction (Road Works / Street Works) notice. This should formalise discussions that have already taken place at co-ordination meetings etc.

2. If an undertaker had planned to carry out works before or during a proposed restriction period then they should contact the street authority and submit notices / permit applications as appropriate.

3. It is recommended that the street authority should send a further notice of proposed restriction with revised dates if the timing has changed significantly as a result of (2). The street authority may extend the deadline for submissions from undertakers (and highway authorities in the case of s58A) if appropriate.

4. Under NRSWA, in the case of s58, the street authority **may** give directions on timing (Directions on Timing notification) in relation to each works notified in response to the notice of proposed restriction. In the case of s58A, the street authority **should** give directions on starting date (Directions on Timing notification) in relation to each works. Under Permits the permit authority would agree appropriate dates with the promoter prior to granting the permit.

5. When the street authority wishes to commence the restriction, it should serve a Restriction in Force (Road Works / Street Works) notice. In the case of s58, this is a non-statutory 'reminder' notice issued following completion of the substantial road works. In the case of s58A, it is a statutory requirement that a direction restricting further works must be given before the last works has been completed.

Timing rules related to the above are defined in section 8.

Where a street authority's consent is required to carry out works during a restriction (i.e. if not covered by standard exemptions) then this should be done offline, e.g. by letter following an initial telephone call. Once consent is granted then the New Activity notification should be submitted in the usual way via EToN.

3.8 Basic relationships between streets, works and notifications

A number of basic rules underpin the new notification regime as described in the Code of Practice:

1. A notification can only apply to works in one street (i.e. a single USRN as defined in the NSG). Each works reference must be unique to a particular USRN. If a works extends over separate parts of a street that have different street authorities then the works in each part of the street must be separately notified to the respective street authority using different works references.

2. Where a works could be considered to belong to more than one street (e.g. junction of a cross roads) then the notification should use the street with the highest road category. Separate notifications may be required for both streets if the works encroaches on the second street.

3. A street or road works project can involve related works in two or more different streets. This also applies to street works that are severed from Immediate works. Where a project involves related works in two or more streets then all New Activity notifications should contain a common project reference. A brief project description should also be provided.

4. Works in any street may involve one or more phases carried out at one or more sites. Separate notifications are required for each works phase and all notifications must use the same works reference.

5. Remedial works to defective interim or permanent reinstatements are treated as a new works phase and normal notification requirements apply. Notifications should use the same works reference as the original parent works; a new works reference number should only be used if the original reference cannot be identified. The subsequent registration notice will confirm whether the resulting reinstatement is interim or permanent.

The works comments facility (see section 3.10) will allow ad-hoc exchange of textual supporting information linked to the overall works.

The relationship between streets, works and phases is illustrated in Figure 3.1.

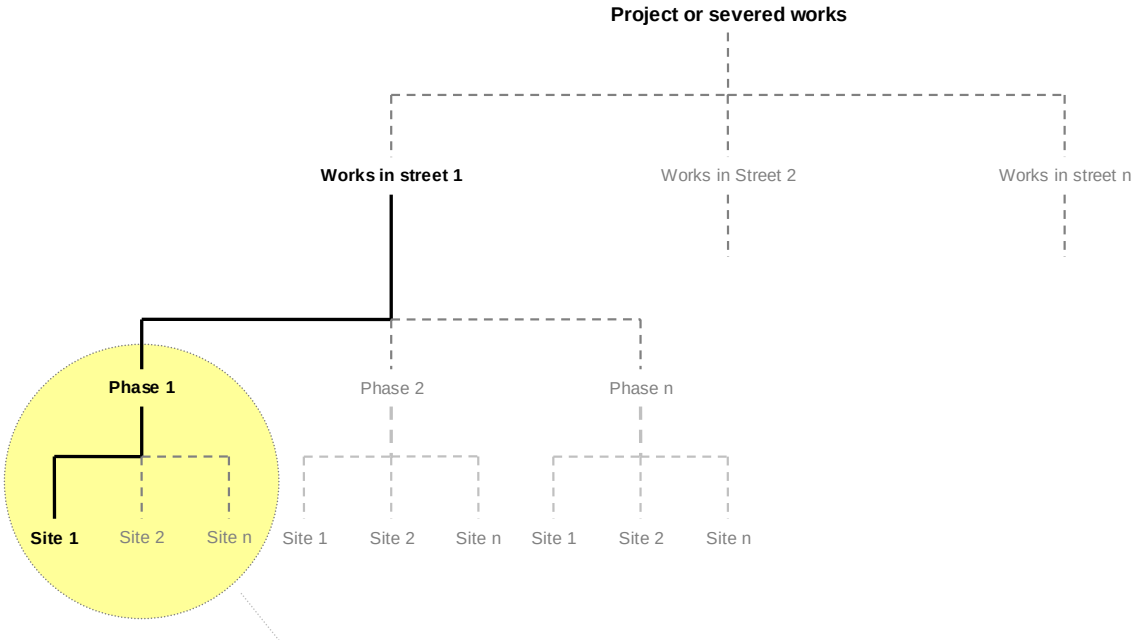


Figure 3.1 Relationship between streets, works and phases

3.9 Forward planning information

Forward planning information for Major works may be submitted via EToN and held on local and central registers to facilitate longer-term planning and co-ordination. The use of EToN will ensure consistency, allowing use of common NSG/ASD data, and use of a common mechanism for sharing of information with interested parties as required (as for cross-noticing) and for providing data into registers. The use of EToN will also help ensure data integrity through the use of extensive automatic validation checking. However, forward planning information does not have to be submitted via EToN.

Whilst forward planning information will be part of EToN, it will be handled separately from the statutory notification and road works registration requirements. In particular, sending of forward planning information would not attract legal proceedings under any circumstances. In general it will be helpful to provide such information, even if incomplete and uncertain, as soon as possible to assist long-term planning and co-ordination, and promoters will be encouraged keep the information continually updated. This will be facilitated by the use of notification sequence number and date data items (see below) which are also required for statutory notifications.

Where a proposed project involves work in more than one street then forward planning information should be submitted separately for each street (as for statutory notifications). The use of a common project reference will allow the information to be related.

Forward planning information can be submitted at any time prior to submitting the New Activity notification. Submission of forward planning information should be prevented (with appropriate warning messages etc.) if any other type of notification exists for the same works reference (i.e. if the New Activity notification has been sent).

Forward planning information can also be cancelled using the same works cancellation mechanism as used for statutory notifications.

Automatic data validation should be limited accordingly. There is no mandatory requirement to maintain an audit trail as for statutory notifications.

3.10ETon messaging

This refers to the requirement for a separate messaging facility within EToN, analogous to e-mail or a simple discussion forum, but linked to individual works. The aim is to support improved communications between works promoters and authorities without the constraints and problems of using free text within notifications, or using separate e-mail etc. In particular, this will:

- Ensure compatibility between sending and receiving organisations.
- Allow works comments to be sent to all organisations to which the original notifications were sent (at the discretion of the sender).
- Avoid the risk of losing or forgetting e-mails etc.

Messaging will be implemented as a Comments notification. There are two separate notification types:

- Works Comments (not to be confused with works comments in EToN 3).
- FPN Comments.

The works comments facility will be used primarily for communication between works promoters and street authorities, both to support information exchange and to provide an electronic record and audit trail linked to the works. The facility could also be used by other interested undertakers and authorities to register concerns etc. Examples include:

- Where a street authority requires additional information from a works promoter in order to assess the impact of the works and mitigating measures, e.g. further details of projects involving works in several streets, or proposals for working outside normal working hours etc.
- To record the outcome of meetings or telephone discussions, e.g. concerning alternative ways of carrying out the works, agreed early starts or extensions or impact of proposed restrictions etc.

Works comments will relate to an individual works (common works reference) and can be read in conjunction with any associated works notification. It will be possible to submit works comments at any time during the works life cycle and comments will be copied to interested parties in the same way as normal notifications. Works comments can also be used in conjunction with forward planning information (e.g. opportunities for collaborative working).

FPN comments will work in a similar manner but used to support private dialogue between a street authority and a works promoter, optionally linked to a specific FPN.

Comments will not be recorded in the statutory register and will not be visible to the general public.

3.11 Notification data change management

3.11.1 General

The underlying requirement is to facilitate improved co-ordination and also ensure that information recorded in street works registers and other related public-access databases (e.g. Elgin) is always as complete, accurate and up-to-date as possible.

EToN 5 provides the following mechanisms to allow changes to notification data:

1. Cancellation of a works/phase, i.e. before occupation of the street.

2. A specially controlled Works Status Correction for Actual Start and Works Stop notifications if sent by mistake or with incorrect data.

3. Opportunity to correct or update values of particular non-critical data elements (defined later) in successive works notifications.

4. Use of a separate Works Data Alteration transaction to amend values of particular works data elements at any time.

5. Resending of particular street authority notifications to replace or amend (update or correct) data sent in previous notifications.

For works promoters the agreement of the street authority should be obtained before sending a Works Data Alteration or Works Status Correction notification (Note: In some cases agreements must be provided. Refer to section 5 for the technical rules on including agreement elements in the various transactions). This is because such changes could have potentially significant consequences for co-ordination or s74 charging etc. The requirements relating to cancellation and corrections are expanded below and illustrated in the state transition diagram in Figure 3.2.

The corresponding EToN transactions are defined fully in section 5. Notice management systems should provide automatic data validation and interlocks to ensure that, as far as possible, the correct notifications containing the correct information are sent in the correct sequence (see section 8). The need for the use of cancellation and correction to recover from mistakes should therefore be limited.

This approach also aims to simplify the associated automatic data validation and related technical implementation requirements.

3.11.2 Works Data Alteration

Works Data Alteration only applies to promoter notifications. Works Data Alteration is not used by street authorities; instead, authorities can resend particular notices, directions and restrictions to correct a previous notification on a complete replacement basis.

Works Data Alteration does not apply to forward planning information which can be re-submitted or updated at any time. Similarly, corrections to registrations are handled simply by sending a further registration notice which provides the latest information for the affected site(s).

Corrections can only apply to current data for an active works/phase and therefore there is no need to identify the specific notification to be corrected. Correctable data items and types, and

the rules for determining which items can be changed at each stage in the notification sequence are defined in section 5.2.11.

In the case of non-critical items where changes will not have any significant consequences, new or missing values can be provided in subsequent notifications without the prior agreement of the street authority. Changes to timing of Major works can be notified in the Activity Confirmation transaction.

Corrections to dates in Actual Start Date and Works Stop notifications are not permitted. In the event of errors being discovered, e.g. notification sent by mistake, then the last notification should be reverted and a new notification submitted at the correct time.

Works Data Alteration data must be stored and managed in addition to the original notification data to provide a complete historical record and audit trail for the works/notification life cycle. New values provided in Works Data Alteration notifications or other notifications must not overwrite existing data provided in previous notification(s). A full audit trail must similarly be provided for all replacement notifications sent by authorities.

3.11.3Works Status Correction

This facility applies to promoters only. It is a non-statutory process that can only be invoked following agreement with the street authority. It is emphasised that works promoters should operate quality control systems that minimise the possibility of notifications being sent by mistake, and it is therefore expected this facility will be used on a very infrequent basis.

A Works Status Correction is used to revert the preceding Actual Start or Works Stop notification (a new notification may follow) as distinct from cancellation of a works/phase. The works will revert to the state that existed immediately prior to the reverted notification being sent (see section 3.11.3) and will proceed from that point using the same work reference.

Note: A reversion of state, where this is valid (see rules in 5.2.10), does not undo notifications that have been sent subsequent to the notification that is being reverted. For example, if a registration is sent subsequent to a Works Stop and the Works Stop is reverted then the registration is still valid.

3.11.4Cancellation of proposed works/phase or restriction

This refers to cancellation of a previously notified proposed restriction or a works/phase before work has actually started. A works that has already started cannot be cancelled. A cancellation may be used where a planned activity is not going to take place, an New Activity notification was sent by mistake or where the notification contains fundamental mistakes (e.g. wrong street authority) and it is necessary/easier to start again.

In the case of voluntary cancellation of a works/phase, the notification should be sent as soon as possible to assist co-ordination. However, statutory cancellation notifications are still required and these should only be sent at prescribed times (see section 8).

A cancellation notification can also be used to cancel potential works notified in forward planning information.

In the case of a New Activity on a new works reference (i.e. the first phase), the term “cancellation” is used to mean either permanently cancelled (i.e. planning not to proceed) or postponed (planning to re-schedule for a later date) for any reason, e.g. unforeseen site problems or adverse weather conditions etc.

If the first phase of a works is cancelled then the works reference must not be reused.

Cancelled works should be clearly identified as such on the statutory register; no data should be deleted.

Cancellation of a works should also automatically cancel any related street authority responses, e.g. duration challenge or direction.

The cancellation transaction is not used for directions. Instead, authorities can resend a Directions transaction with no direction times or other details (i.e. with relevant elements supplied containing a null value), again on a complete replacement basis.

3.12 Fixed Penalty Notices

This refers to a facility for transmission of FPNs and notices withdrawing FPNs via EToN.

The FPN regulations apply to statutory undertakers only. However, systems must also allow street authorities to send 'shadow' FPNs to highway authority promoters in order to demonstrate parity of treatment with undertakers.

It should be noted that the provision of this facility does not mean that undertakers have to use it. However, authorities must use EToN if an undertaker wishes to receive FPNs by this method. Details of delivery options for FPNs are provided in promoters' Operational Districts (OD) data (see section 4.7.15).

The associated XML web services transaction (see section 7) will provide the necessary delivery confirmation and time stamping for audit trail. FPNs will relate to a particular works and will be sent to the works promoter or agent (where pre-arranged) for the district number concerned. The web service URL will be specified separately in the OD data (see section 5.2.23) allowing an undertaker to use a different return path for receiving FPNs via EToN if required.

Only the variable data (e.g. FPN number, offence type etc.) is to be transmitted via EToN. Notice management systems for use by undertakers must automatically combine the data in the XML message and fixed data from the sending authority's OD data (e.g. details for representations and payment) in order to 'reconstitute' the FPN.

Sending and receiving systems must provide the necessary functionality for re-producing FPNs as legal documents as prescribed in the regulations and Codes of Practice, i.e. by holding templates of the forms (see Code of Practice).

Any other related functionality for managing FPNs and payments etc. will be as provided by individual developers.

3.13 State definition

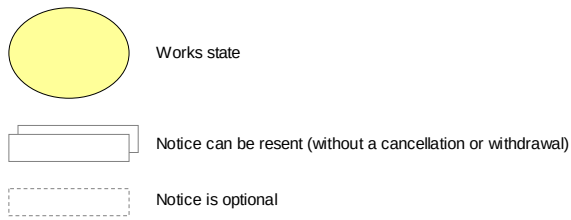
A works can exist in one of seven different states at any given time within EToN, as defined in Table 3.3. Any works/phase has a life cycle which always includes an initial state and a final state, and may include one or more intermediate states. Particular 'New Activity' notifications create the initial states, and other notifications cause transitions to other states as shown in the following table.

Table 3.3 State definitions

State name	State description	Notification that causes a state transition
Forward planning	Applies to Major works only. Initial state if optional forward planning information is provided.	Forward Planning Information
Advance planning	Advance notification period, applies to Major works only. Can be initial state if no forward planning information exists.	Initial Notice / PAA Application (Major works)
Planned work about to start	Notification of planned works (or Activity confirmation for Major works) has been given but works have not yet started. Initial state for Standard and Minor works. Cannot be initial state for Major works or Immediate works.	Confirmation Notice (Major works), Initial Notice (Standard or Minor works) or Permit Application
Work in progress	Work has started, i.e. actual occupation of the street has occurred. Initial state for Immediate works. Cannot be initial state for any other category of works. Registration notices can be sent in this state.	Initial Notice / Permit Application (Immediate works) or Actual Start Date for all other works.
Work completed (with excavation)	Work has finished and the street returned to normal use. Can only follow 'work in progress' state. Registration notices can be sent in this state. Where works are notified as not requiring excavation and subsequently the activity is found to require excavation then a new, separate notification covering this new activity is required and all the normal noticing rules apply.	Work Stop
Work completed (no excavation)	Work has finished and the street returned to normal use. This includes works which did not involve excavation (e.g. inspection works in TS streets) and abandoned works (i.e. works cancelled after the street has been occupied). Can only follow 'work in progress' state.	Work Stop
Work cancelled	Planned or unplanned work is cancelled (re-scheduled or will not proceed) before occupation of the street. Cannot follow work completed states.	Cancellation (voluntary **or** statutory).

There are basic sequences of allowable state transitions depending on the type of works, i.e. works category. Each basic sequence may involve looping if particular notifications are reverted and resent, and/or branching if a works/phase is cancelled.

Allowable state transitions are illustrated in Figure 3.2 using the following notation:



Notification timing and sequence rules are defined in section 8.

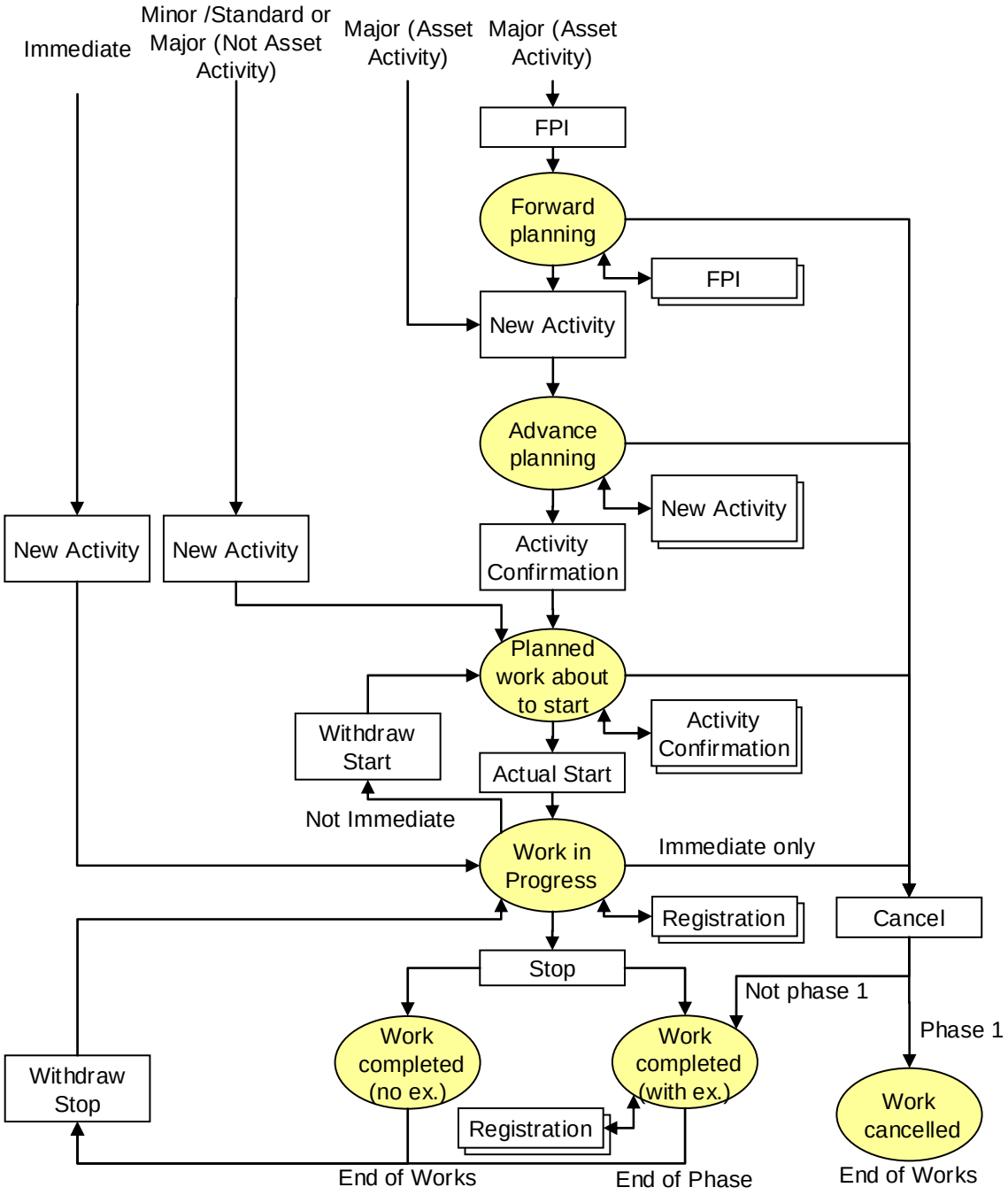


Figure 3.2 Works state transition diagram

The State Transition has separate paths for works with and without excavation. It is not always possible to determine whether works are completed with or without excavation from the charge category.

- Charge Categories 1 and 2 relate to works with excavation, and registrations must be provided.
- Charge Categories 6, 9, 11 and 12 relates to works without excavation or laying of apparatus only and registrations may not be provided.
- Systems should be able to receive, but not require, registrations to be provided for all other Charge Categories.
- The sending of a registration notice for a works classifies the works as "with excavation" and a full registration notice should be supplied at the end of all subsequent phases (except for the scenario where emergency remedial works follows another phase, see below).

The following tables show the additional notifications **within** each works state, for both promoters and street authorities, which are not included in the state transition diagram.

Table 3.4 Other notifications within each works state

Promoter notification	Notifications within state					
	Forward planning	Advance planning	Work about to start	Work In progress	Work completed	Work cancelled
Revised Duration Estimate		N	N	NP		
Duration Variation Application (In Progress)				P		
Duration Challenge Non-acceptance		N	N	NP		
Error Correction		N	N	N	NP	
Works Data Variation			P	P		
Works Comments	NP	NP	NP	NP	NP	NP
FPN Comments		NP	NP	NP	NP	NP

Primary notice authority notification	Notifications within works state					
	Forward planning	Advance planning	Work about to start	Work In progress	Work completed	Work cancelled
Duration Challenge		N	N	NP		
Direction on Timing		N	N	N		
Direction on Placing Apparatus		N	N			
Undue Delay				N		
Grant PAA		P				
Grant Permit / Variation			P	P		
Refuse Permit / PAA		P	P	P		
Revoke Permit (Proposed Works)			P			
Revoke Permit (Works in Progress)				P		
Authority Imposed Variation			P	P		
Informal Overrun Warning				NP	NP	
Fixed Penalty Notice / Withdrawal		NP	NP	NP	NP	NP
FPN Comments		NP	NP	NP	NP	NP
Works Comments	NP	NP	NP	NP	NP	NP

Key:

N - Applies to NRSWA

P - Applies to Permits

Notes

1. Promoters can revise duration estimates in an Activity Confirmation Notification, i.e. revising the estimated end date provided in a New Activity notification.

2. The Revised Duration Estimate must only be used for Works in Progress for Permits to confirm the agreed reasonable period following a duration challenge and subsequent negotiations

3. If a street authority gives a Direction on Placing Apparatus or any form of Permit response which ultimately prevents the works from proceeding then the undertaker must submit a Cancellation notification.

4. There can only be a maximum of one response to an application/variation. If a permit has been refused, that must be followed by a further application/variation before it can be granted. Once a permit is granted it can only be changed by "Revoke Permit" or "Authority Imposed Variation".

5. Rules relating to giving of directions are defined in Table 3.2.

6. FPNs cannot be issued under Permits for works that have not yet started. However, an FPN can be given up to 91 days after the offence so EToN has to allow these notifications to be sent during these states in a subsequent phase

3.14 Attaching documents to EToN notifications

The Codes of Practice recommend that drawings, digital photographs and other supporting information should be provided with particular EToN notifications where appropriate. This applies mainly to notifications sent by promoters.

In order to avoid the impact of large file sizes on EToN web services transactions, the transfer of attachments will be achieved indirectly by providing access to files on a web server that may be an FTP, HTTP or HTTPS server. The recipient can then access the files as required when processing the notifications. The related functionality is a matter for individual system developers, e.g. providing hyperlinks to simplify document access, and related data management.

Attachments are optional; any number of URLs may be associated with each relevant notification. The 'base' URL (i.e. protocol prefix and domain name) must be pre-defined in the sender's OD data (see section 4.7.15) and the specific URL suffix must be provided in the individual notifications. Each file will have a single address. A file reference should only be provided once and need not be included on future notifications. If the base URL is subsequently changed then the new value is deemed to apply to all previous attachments.

Attachments referenced in a notification must be accessible online at the URL specified until the end of the warranty period for those works. The attachments may then be archived but must be retrievable using the original URL reference for a period in accordance with the advice given in section 3.6.3 of the Co-ordination Code of Practice.

To help ensure that this mechanism works effectively and efficiently, attachments should only be used where necessary and only the minimum essential information should be included.

Allowable file types are listed below:

File type	Description	File extensions
jpeg	Digital photograph	**.jpg .jpeg .jpe**
pdf	Document containing pictures, text etc. in Adobe portable document format	**.pdf**

dxf	CAD drawings	**.dxf**
html	Document containing pictures, text etc	**.htm .html**

Whilst attachments with any other file extensions are not expressly prohibited, systems cannot be guaranteed to accept them at the receiving end, and they must only be sent by specific agreement between sender and receiver.

3.15 Notification confidentiality

The Co-ordination Code of Practice (see section 3.6.2) makes it clear that restricted information should not be publicly available. This applies to notifications from promoters.

Promoters may indicate on certain notifications whether or not information about a specific works is to be restricted, i.e. on an 'all or nothing' basis. No details of any restricted works should be automatically accessible to the public, including the location and timing of the works. A promoter may subsequently change the restriction status (e.g. from restricted to unrestricted) in a subsequent notification or using a Works Data Alteration notification.

Notice management systems should allow restricted notifications to be copied to promoters and other authorities that have expressed an interest in the street on an individual copy recipient basis at the discretion of the sender (see section 6).

Personal details and Comments should not be visible to the general public in any circumstances. Personal data elements are defined in section 4.3.

3.16 Agreements

The new notification regime includes a mechanism for recording street authority consents that are required in various situations (e.g. for early starts) in promoter notifications. The street authority's agreement must also be obtained before sending corrections as described above.

Details are provided in sections 4 and 5.

3.17 Conditions

Permit schemes introduce the concept of Conditions that can be applied to a Permit. The approach adopted is based on the promoter including Conditions in their Permit Application. If the Street Authority are unhappy with the Conditions applied then the Permit is rejected and the Conditions that the Street Authority require to grant the Permit are recorded on the rejection notification. The promoter can then either accept the Conditions requested by sending in a revised Permit Application with all the required Conditions or re-plan the work to enable future Permit Applications for the work to be acceptable to the Street Authority.

4.DATA DEFINITION

4.1System model

The key relationships in the system are described within this section. Note that "**has**" is used for a mandatory relationship, and "**can have**" is used for an optional relationship. Primary notice authority is used as the generic term for street authorities and permit authorities. Note that the following examples are not exhaustive:

- Each real-world street has a corresponding entry in the NSG maintained by the local highway authority. Motorways and trunk roads are also recorded separately in the trunk road street gazetteer (TRSG) maintained by the Highways Agency.

- A street record has one or more associated additional street data (ASD) records.

- A street (i.e. a USRN) has one or more primary notice authorities. Part of a street has one primary notice authority. Where NRSWA is in force then this will be the street authority. Where a permit scheme is in operation this will be the permit authority (which may also be the street authority). For Private Streets this will be the Local Highway Authority for the area. Street and permit authorities can have an interest in one or more streets for which they are not the primary notice authority. Other authorities (transport, bridge and sewer) can also have an interest in one or more streets.

- A works promoter can have an interest in one or more streets. A promoter can be an undertaker or a highway authority.

- A works promoter has one or more works. A promoter can also have one or more projects which involve related works in multiple streets (or parts of a street with different primary notice authorities).

- A street (or part of a street) can have many works (i.e. each with a different works reference).

- A works has one or more phases, including remedial works.

- A works can have one or more excavation sites. Sites have a life cycle.

- A site may be relevant to one or more works phases.

Specific examples of EToN-related entities and relationships are as follows:

- Each promoter and authority (primary notice authority, bridge authority etc.) has associated operational districts (OD) and area of interest (AOI) data which is required to support the electronic exchange of notifications.

- A street or part of a street can have one or more associated restrictions.

- A works phase can have an associated primary authority notification (e.g. Duration Challenge).

- A works can have associated forward planning information (only applies to Major works).

- A works can have associated textual comments, i.e. relating to the overall works life cycle. There can be many separate comments (from any interested party) associated with a works.

- A works phase can have one or more associated works notifications. There may be no notifications at all for works not involving excavation in non-traffic-sensitive streets.

- A site can occur on one or more associated registration (Registration of Reinstatement) notifications. A registration notification normally has one or more sites. An 'empty' registration notification with no site details can be sent to delete any existing sites, e.g. if a notification was sent by mistake or contained errors.

The following applies to NRSWA only

- A works can have associated Directions on the Placement of Apparatus given by the street authority. An invalid direction can be resent to correct information.

- A works phase can have one or more associated Directions on Timing (but only one current direction). An invalid direction can be re-sent to correct information.

The following applies only where permit schemes are operating

- A Major works has one or more Provisional Advance Authorisation (PAA) applications (applies to asset activity works phases only). Each PAA application can have one permit response from the primary notice authority. The response, if given, can either grant or refuse the PAA application. If no response is given (within the prescribed period) the PAA is deemed to be granted.

- A works has one or more permit applications. The response, if given, can either grant or refuse the permit application. If no response is given (within the prescribed period) the permit is deemed to be granted.

- Each granted permit can have one or more authority imposed variations.

- Each granted permit can have one permit revocation notification (issued by the primary notice authority)

- Each granted permit can have one or more works promoter permit variation applications. Each variation application can have one permit response from the primary notice authority. The response, if given, can either grant or refuse the variation application. Granted variations replace the original permit. If no response is given (within the prescribed period) the permit variation application is deemed to be granted.

The following applies to NRSWA and permit schemes

- A proposed works, i.e. associated forward planning information or new activity notification(s), can have an associated cancellation notification.

- A works phase can have one or more works data alteration notifications, which apply to the current data.

- A works can have one or more associated FPNs (and notification withdrawing FPNs).

- A notification can result in an FPN (and a notification withdrawing an FPN), e.g. because it contained incorrect information.

- An FPN (and a notification withdrawing an FPN) can have associated textual comments. There can be many separate comments (from the promoter and/or primary notice authority in question) associated with an FPN.

4.2Data structure and content

The overall EToN notification requirements can be translated into a number of common information groups and sub-groups containing standard data elements as listed below. The aim is to ensure a harmonised and consistent approach which minimises data redundancy and facilitates efficient EToN transactions using XML web services.

1. Addressing
2. Transaction
3. Attachment
4. Agreement
5. Activity
6. Street
7. Spatial location
8. Activity timing
9. Working method
10. Site and reinstatement
11. Inspection units
12. Directions and restrictions
13. Fixed penalty notice
14. Works contacts
15. Organisation and operational districts
16. Activity Conditions (permit schemes only)

Data element definitions are provided in section 4.7 in the group order listed above. Notification data contents are defined in section 5.

The UpperCamelCase naming convention is used for all EToN data elements. Note that where an all-uppercase abbreviation (e.g. FPN or URL) is used in a name then the following word starts with a lowercase letter.

Note that hereafter the term “group” is used to refer to a group or a sub-group.

4.3Personal details

The following data elements may contain personal details which must not be visible to the general public:

Agreements		AgreementContact
Works contacts		PromoterTelephoneNumber
		ContractorTelephoneNumber

FPN transactions are not recorded in street works registers or public websites.

4.4Referencing

The following table identifies the key entities and the key attributes used for uniquely identifying each instance of an entity.

Table 4.1 Key attributes

Entity	Key attribute	Data element name	Comments
Sender	Organisation reference	NotificationFromOrg	The SWA_ORG_REF value allocated by DfT (see section 10). Uniquely identifies the sending organisation.
	District number	NotificationFromDist	The DISTRICT_REF value allocated by the organisation (see section 10). Uniquely identifies the sending district within the organisation.
Project	Project reference	ProjectReference	Allocated by the promoter and includes the promoter Prefix and District.
Works	Works reference	WorksReference	Allocated by the promoter and includes the promoter Prefix and District The works reference must be unique to an individual works and must not be re-used following permanent cancellation of proposed works.
Site	Site number	SiteNumber	Identifies an individual excavation site within a works.
Street	Unique street reference number (USRN) or trunk road reference number (TRRN)	USRN	The NSG and TRSG should be integrated to form a seamless national dataset. The TRRN (TRSG) must be used for motorways and trunk roads and the USRN (NSG) must be used for all other roads.
Notification	Notification sequence number	NotificationSequence Number	The Senders unique sequence number of a notification/response for a particular works (see section 4.5).
Notification	Permit reference	ApplicationSequence Number	Uniquely identifies the permit when combined with the Works Reference and NotificationSequenceNumber of the Permit response (see section 4.4.1)
FPN	FPN number	FPNnumber	The unique serial number of an FPN which includes the Street Authority's prefix and District.

All references are prefixed by the organisation prefix (discussed later) as allocated by DfT and District Number. This ensures that the works reference will uniquely identify each works, nationally.

The combination of Sender and notification sequence number will uniquely identify each notification in relation to a specific works. Phase type will not uniquely identify an individual

works phase because a works can have more than one phase of the same type (although this would be unusual). An explicit phase number attribute is not used in EToN as **works phases and notifications are not allowed to overlap**. Notice management system applications must therefore identify each separate phase of a works from the notification type and sequence data.

It is possible (although it should not happen) that the same physical street may appear in both the NSG and TRSG. In this event system users will need to determine the appropriate record to notify the works against. If there is any duplication then the TRSG reference should be used and the notification sent to the Highways Agency.

Note that in EToN 5, site details are only provided in a Registration notice. Category A inspections will, by convention, be recorded against site number 1, and it is for system developers to decide how they accommodate this.

Note that there is no requirement in EToN 5 for the use of unique spatial feature identifiers (linking to surface topographic features etc.) in accordance with DNF principles. However, if necessary, any spatial feature can be uniquely identified using the above attributes, e.g. a polygon feature that defines an area occupied by street works is uniquely identified by works reference, and sequence number.

The FPN number will uniquely identify each fixed penalty notice, nationally.

4.4.1Permit Schemes

The combination of WorksReference and works promoter NotificationSequenceNumber will uniquely identify each PAA, permit and permit variation application. Permit authority permit responses will cross-reference each application using an ApplicationSequenceNumber; this will be the same as the NotificationSequenceNumber on the promoter's original application.

4.4.2Generating permit reference numbers

Permit reference numbers will be generated in one of two ways.
a) for granted applications this will be a combination of the WorksReference, the ApplicationSequenceNumber and the NotificationSequenceNumber from the permit authority response notification, separated by periods, e.g.:

AB1230045A/4.3.2

b) for applications where the permit authority has failed to respond within the appropriate response period (deemed permit) this will be a combination of the WorksReference and the ApplicationSequenceNumber, e.g.:

AB1230045A/4.3

4.5Notification sequence number

A sequence number is a sequential number allocated by an individual district within the Sending Organisation, starting at one on the first notification sent for each works reference and incremented by one on each successive notification

Sequence Numbers will not apply to FPNs or related transactions (FPN Comments and FPN Withdrawal).

Sequence numbers can be used to check that all notifications in relation to a particular works have been received, and ensure that they are processed in the correct order. This is particularly important as the EToN 5 protocol (see section 5) aims to minimise transmission of redundant information in successive notifications, i.e. the receiving system will need to link all related notifications together to provide a complete picture.

The use of sequence numbers is illustrated in the following example with the notifications listed in chronological order of sending.

Notification type	Sequence number	
	Works promoter	Street authority
Forward Planning Information	1	
Forward Planning Information (update)	2	
Initial Notice	3	
Direction on Timing		1
Works Comments (promoter)	4	
Works Comments (authority)		2
Confirmation Notice	5	
Duration Challenge		3
Actual Start Date	6	
Works Data Alteration	7	
Works Comments (promoter)	8	
Works Stop	9	
Registration of Reinstatement	10	
Registration of Reinstatement	11	

4.6 Data types

This section defines the basic data standards necessary to ensure system interoperability.

All EToN data transfers will use XML web services. EToN will conform to XML Schema Part 2: Data types Second Edition, a Recommendation of the World Wide Web Consortium (W3C), which is based on ISO 8610.

A limited number of data types apply to all notifications as summarised in the following table. These data types also apply to exchange of data with the NSG Hub (see section 10).

Table 4.2 EToN 5 standard data types

Requirement	XML standard data type	Format	Comments
Date	Date	YYYY-MM-DD	
Time	Time	hh:mm:ss	The 24-hour clock format is used where hh = hour, mm = minute and ss = seconds. Optional fractional seconds component is not used.
Date and time	dateTime	YYYY-MM-DDThh:mm:ss	Optional fractional seconds component is not used.
Alpha-numeric text	String	A sequence of characters represented in UTF-8 encoding	
Numeric	Decimal	A real numeric value	e.g. 123456.78 (allows number of fractional digits to be specified in XML schema).
	Integer	An integer numeric value	e.g. 12.
Data capture code	Enumeration	A set of unique values	Use of code numbers rather than descriptive text, starting at

Requirement	XML standard data type	Format	Comments
			1.
Spatial co-ordinates	Decimal		Co-ordinates are specified to 2 decimal places.

For consistency, enumeration is also used for binary status (Boolean), where 0 = false condition, and 1 = true condition.

There is no requirement for EToN to work outside of the UK, e.g. across different time zones.

4.7Data element definitions

Definitions of data elements in each group are provided in tabular form below.

Each table includes the following:

1. The name of the group.
2. The name of each data element within a group.
3. Commentary on the use of each data element.
4. The data element type and maximum length (shown in brackets).
5. The allowable value range, used for data validation.
6. Notes (below the table) contain explanation and any associated rules.

Note that unless stated otherwise, the data definitions contained in this technical specification supersede the previous DfT data capture codes as published on the DfT website and elsewhere.

The use of repeating groups and elements for each transaction type are defined in section 5.

4.7.1Addressing

This structure is used to provide information about the sender and recipient(s) of each notification. This will allow all recipients to be aware of who else has received the notification and allow organisations to copy responses to recipients of the original notification. It will facilitate improved communications using the Works Comments notification type.

The requirements relating to sending and copying of notifications are defined more fully in section 6.

Group	Data element	Comments	Type	Value range
Sender	NotificationFromOrg	The organisation reference of the sender to which any responses should be sent.	Integer (4)	1-9999
	NotificationFromDist	The operational district number of the sending organisation to which any responses should be sent. Must be a valid operational district within that organisation's OD data.	Integer (3)	1-999
Primary recipient	RecipientOrg	The organisation reference of the primary recipient.	Integer (4)	1-9999
	RecipientDist	The operational district number of the primary recipient.	Integer (3)	1-999
Copy recipient	CopyRecipientOrg	The organisation reference of the copy recipient.	Integer (4)	1-9999
	CopyRecipientDist	The operational district number of the copy recipient.	Integer (3)	1-999

Notes

1. The Sender, Primary Recipient and Copy Recipient organisation references are the relevant SWA_ORG_REF values assigned by DfT. The operational district references are the relevant DISTRICT_REF values assigned by the respective organisation. These values are contained in the OD data for each organisation and district.

2. Recipient data will allow positive confirmation that the notification has been received by the intended recipient, i.e. the XML message has been sent to the correct web services URL.

3. Relevant Sender, Primary Recipient and Copy Recipient address information is included in all notifications to provide an audit trail. Note that copy recipients may change in successive notifications (at the discretion of the sender).

4.7.2Transaction

This structure is used for 'header data' in EToN notifications.

Group	Data element	Comments	Type	Value range
Notification	NotificationType	Identifies the type of notification.	Enumeration	See Table 5.1
	NotificationSequence Number	A sequence number automatically assigned to each notification (promoter and authority) for a particular works reference, according to the strict chronological order in which the notifications are sent.	Integer (3)	1 to 999
	VersionCreatedDatim	Date and time the notification was created or last updated prior to sending, for audit trail purposes and to facilitate correct ordering of comments. This may be significantly different from the time and date that the notification is received if delivery is delayed due to system or network etc. problems. This is separate from the time stamp applied by the receiving systems and has no legal significance.	dateTime	
	NotificationRestricted	Indicates whether or not the notification is restricted.	Enumeration	0 Not restricted 1 Restricted
	NotificationComments	Used for notification-specific explanations, reasons, justification, details of any agreements etc. (see notes below).	String (500)	
	ApplicationSequenceNumber	Used in permit responses to PAA, Permit and Permit Variation applications	Integer (3)	1 to 999

Notes

1. The NotificationComments element should be used for notification-specific comments only. It applies to work promoters and authorities. Information provided by **promoters** can include, as appropriate:
   - Details of any discussions and agreements with the street authority.
   - Explanation of why works have been cancelled (applies to s54(4A) and s55(8)).

- Explanation of why works are being classified as Immediate.
- Confirm whether or not advance information or warning has been provided to frontagers if required.
- Whether or not works have been severed from Immediate works.
- Whether the notification of starting date is being submitted in response to a s58 or s58A restriction notice.
- Whether the requirements of regulations in relation to road closure and portable light signals have been met or at least applied for.
- Reason for revised/delayed start date for permanent reinstatements following interim reinstatements (e.g. weather).
- Details of the request made to the local highway authority for a USRN, status of SED approval etc.
- Reasons for working at night and/or weekends.

Information provided by **authorities** can include, as appropriate:

- Reason for giving directions.
- Details of timing restrictions if not provided using the DirectionTimes structure.
- Details of the alleged offence in an FPN.

4.7.3Attachment

Group	Data element	Comments	Type	Value range
Attachment	NotificationAttachment	Directory and file name details for any associated supporting documents. Combined with base URL components provided in OD data to provide full path. Only applies to particular notification types.	String (256)	Valid characters for URL as defined in the XML schema

1. Attachments are allowed on New Activity, Activity Confirmation and Works Data Alteration notices for any type of works, in addition to Registrations, Bar Hole Registrations, and Restrictions.. **Attachments should only be used where necessary or beneficial**.
2. URLs for attachments should be made available before sending the notification.

4.7.4Agreement

This structure is used to provide information about consents that should be obtained before submitting particular notifications.

Group	Data element	Comments	Type	Value range
Agreement	AgreementReference	A reference provided by the authorising officer.	String (25)	Values are limited to uppercase alphabetic characters A-Z, numeric characters 0-9 and the separators "/" and "-". Spaces must not be used.
	AgreementContact	Name of the person within the relevant authority who agreed the action.	String (30)	
	AgreementDatim	Date and time when the agreement was obtained.	dateTime	
	AgreementType	Details of any necessary consents that should be obtained before carrying out the works and, in some cases, before submitting the notification. One or more applicable consent types should be selected as appropriate.	Enumeration	1 Use of a provisional USRN 2 Customer connection during a restriction 3 Other work during a restriction 4 Consent to place apparatus in a protected street 5 Early start 6 Not used 7 Confirm specified telephone number called (where applicable) prior to starting Immediate works 8 Revised Reasonable Period following a dispute over a revised duration estimate (applicable in a revised notification) 9 Works status correction 10 Works Data Alteration 11 Extension to validity period

Notes

1. It is not mandatory for authorities to provide an agreement reference.

2. A single agreement reference, contact name and date can apply to more than one agreement type.

3. Only agreements applicable to the current notification should be included, e.g. consent to place apparatus in a protected street would be included in the New Activity notification but not in any subsequent notifications.

4. A notification may still be submitted even if a required consent has not been obtained, e.g. where an early start is being requested, except where this is specifically prohibited in the notification definitions. The position and reasons should be explained in the textual comments (NotificationComments).

5. Agreement Type 2 - Customer Connection During a Restriction. This is only required for the first 20 days of the overall restriction, during which the restriction applies to connections as well as other works.

6. Agreement Type 3 - Other work during a restriction. This only applies to works that are not normally permitted during a restriction. For example, this agreement is not required for Immediate works.

7. Agreement Type 11 - Extension to Validity Period.

   The use of this agreement type for notifications should not cause transactions to be rejected.

   The use of this agreement type does not permit violation of the notification sequencing rules defined elsewhere in the specification.

Allowable agreement type(s) for each promoter notification group are specified in the following table.

Applicable notification group	**Agreement type**									
	1	**2**	**3**	**4**	**5**	**7**	**8**	**9**	**10**	**11**
New Activity (Non-Immediate works)	✔	✔	✔	✔	✔					
Activity Confirmation		✔	✔	✔	✔					✔
New Activity (Immediate works)	✔					✔				
Revised Duration Estimate							✔			
Works Status Correction								✔		
Works Data Alteration									✔	

4.7.5Activity

The structure is used to uniquely identify each works and associated phases or individual street occupations.

Group	Data element	Comments	Type	Value range
Project	ProjectReference	Used to link related works in different streets in order to assist co-ordination.	String (24)	See note 1
	ProjectDescription	A description of the overall project.	String (500)	
Works	WorksReference	Reference for the proposed works. Must be unique nationally.	String (24)	See note 1
	ActualWorksReference	Used in an Unattributable Works Response to identify the promoter's works reference for the activity	String(24)	
	WorksCategory	The category of the works / activity.	Enumeration	1 Major 2 Standard 3 Minor 4 Immediate – Urgent 5 Immediate – Emergency
	NumberOfPhases	The expected number of works phases. Included in New Activity notification. The number of planned phases should not normally exceed 2 or 3.	Integer (2)	1-99

	ChargeCategory	Used to indicate whether or not the works will involve breaking up the street and, where applicable, the reason for the exemption of s74 charges: **Codes 1-2** should be used for normal chargeable works in publicly maintainable streets. **Codes 3-5** should be used for any works (which may involve breaking up the street) in streets that are exempt from the s74 regulations. **Codes 6-10** should be used for works that are exempt from the s74 regulations. **Codes 11-12** should be used for works that do not involve breaking up the street and are therefore exempt from the s74 regulations.	Enumeration	1 Works involving excavation (single promoter) 2 Works involving excavation (collaborative working, primary promoter) 3 Works in footpath or bridleway 4 Works in a highway in relation to which a pedestrian planning order is in place 5 Works in a highway whose use by vehicular traffic is prohibited by a traffic order (that applies at all times) 6 Laying apparatus only (collaborative works, secondary promoter) 7 Works for road purposes carried out on behalf of a highway authority 8 Replacing poles, lamps, columns or signs in the same location 9 Pole testing 10 Repairing, resetting or replacing manhole or chamber covers or frames 11 Works in non-traffic-sensitive streets that require opening of the highway, but not breaking it up 12 Other works not involving excavation
	CancelledWorksStatus	Used in voluntary and statutory cancellation notifications. Applies to first phase only. Identifies whether works is cancelled (i.e. plan not to proceed) or postponed (intend to carry out works at a later date).	Enumeration	1 Activity permanently cancelled 2 Not used 3 Activity postponed – future date not yet known
	WorksDescription	A plain English, detailed description of the overall works including comments on any future phases.	String (500)	
Phase	PhaseType	Indicates the individual works phase type. A works can include multiple phases of the same type, e.g. there could be two or more type 1 phases if unexpected problems are encountered on site.	Enumeration	1 Asset activity and reinstatement if necessary 2 Interim to permanent reinstatement 3 Remedial reinstatement 4 Core sampling

Notes

1. Project and works references apply to both works promoters and authorities. All references consist of a 2-character organisation prefix (the SWA_ORG_PREFIX value), a 3-character district number (the DISTRICT_REF value as a numeric string) and a 19-character works reference. Values for works references are determined by the sending organisation and should be unique within the district. Each works reference should therefore be unique, nationally. All references are limited to uppercase alphabetic characters A-Z, numeric characters 0-9 and the separators "/" and "-". Spaces must not be used.

2. In the case of collaborative works, secondary promoters should confirm that works are laying apparatus only (ChargeCategory value = 6).

3. A value for the planned number of phases should be provided to assist co-ordination. The actual number of phases may be different.

4. Where works that have been notified as requiring excavation subsequently do not require excavation, the Works Stop notification should include the appropriate confirmation. A reinstatement registration is then not required.

5. Examples of “other works not involving excavation” (ChargeCategory value = 12) include works carried out on private property where vehicles or equipment have to be parked on the public highway, or where multiple Immediate notifications are given in the course of locating a gas leak and one or more notifications are then closed as non-excavatory.

6. CancelledWorksStatus: The “postponed” statuses might be deemed to imply that the works reference can be re-used on subsequent works. The use of enumeration 3 (works postponed) does not permit the works reference to be reused where this would not normally be allowed.

4.7.6Street

This structure is used to provide information about the street containing the works, restriction etc.

Group	Data element	Comments	Type	Value range
Street	USRN	The unique street reference number of the Type 1 or Type 2 street from the NSG type 11 Street record. This element will not be provided for provisional streets.	Integer (8)	100001 to 99999999 (or null)
	ProvisionalStreetName	The street name or description of the provisional street.	String (100)	
	ProvisionalStreetLocality	The locality name of the provisional street.	String (35)	
	ProvisionalStreetTown	The town name of the provisional street.	String (30)	
	ProvisionalStreetCounty	The county name of the provisional street.	String (30)	
	ApplicableDesignation	The designation applicable to the works. This should be provided wherever a works is notified against a street where a designation exists and that designation applies to the notification.	Enumeration	See values for STREET_SPECIAL_DESIG_CODE in section 10.5.13.

Notes

1. The locality name refers to a neighbourhood, suburb, district, village, estate, settlement, or parish that may form part of a town. Where an industrial estate contains streets it is defined as a locality in its own right.

2. Values for locality, town and county for a provisional street should be obtained from the NSG.

3. Where appropriate, additional information about particular designations should be provided in the notification comments (see section 4.7.2).

4.7.7Spatial location

This structure is used to provide spatial information about street and road works including the location/extent of proposed excavations and the overall area(s) occupied by works, the location/extent of individual reinstatements and the parts of a street affected by restrictions. Point, polyline or polygon features can be defined as appropriate depending on the physical extent of works and reinstatements etc.

It is also used by both promoters and authorities for submission of Area of Interest (AOI) data. AOI polygons can be used in conjunction with ASD Additional Street Data records (see section 10).

Group	Data element	Comments	Type	Value range
Spatial location	InterestType	Used for AOI transactions only. Identifies whether the AOI polygon is for receiving works notifications or restriction and licence notices.	Enumeration	8 All notifications 9 Restrictions and licences only
	LocationFeatureType	Identifies the spatial feature type being used to represent the geographical location of a works or reinstatement etc.	Enumeration	1 Point 2 Polyline 3 Simple polygon
	LocationCoordinates	One or more co-ordinate pairs (Easting and Northing) representing the centroid of a small area; or the centreline of a long trench; or the area of a works, site, restriction etc.	Decimal (8,2)	Easting: 080000.00 to 656100.00, Northing: 005000.00 to 657700.00 . There must be only one co-ordinate pair for a point feature, at least 2 co-ordinate pairs for a polyline feature, and at least 4 co-ordinate pairs for a polygon feature.
	LocationDescription	A label or short description of the location of the works, site, restriction etc.	String (120)	

Notes

1. All notifications (InterestType value = 8) means all works notifications, restriction-related notices/directions and notices of intention to issue a street works licence.

2. All co-ordinates will use the OSGB 36 British National Grid reference system. All co-ordinate values should be specified to two decimal places, i.e. equivalent of an 8-digit NGR.

3. A simple polygon is represented by a linear ring which is a closed, simple piece-wise linear path defined by a list of coordinates that are assumed to be connected by straight line segments. The last coordinate must be coincident with the first coordinate and at least four coordinates are required (three to define a ring plus the fourth duplicated one).

4. There is no requirement in EToN 5 to identify the method of obtaining spatial co-ordinates, i.e. whether **absolute** (obtained using satellite positioning systems), or **relative** (directly or indirectly derived from a topographic background map). It is anticipated that this and related accuracy issues will be addressed in future revisions of EToN.

4.7.8Activity timing

This structure is used to provide information about timing of works. A subset of elements is also used for restrictions.

Group	Data element	Comments	Type	Value range
Activity timing	ProposedStartDate	The proposed start date for the works/phase.	Date	See section 8 for timing and sequence validation rules.
	EstimatedEndDate	The estimated end date of the works/phase for NRSWA. The requested permit end date for Permits.	Date	
	ActualStartDate	The actual start date of the works/phase.	Date	
	ActualEndDate	The actual end date of the works/phase.	Date	
	StartTime	Either the actual start time of the works (Immediate works notification if sent retrospectively) or estimated start time (Immediate notification sent in advance).	Time	
	WorkingHours	Whether or not work will be done outside normal working hours.	Enumeration	0 No 1 Yes

Notes

1. Dates can be working or non-working days.

2. Values for ProposedStartDate and EstimatedEndDate may be updated during the life cycle of a works/phase, e.g. if values provided in a Confirmation Notice are different from those provided in an Initial Notice, if the dates are amended in an Actual Start Date notice, or if a Revised Duration Estimate notice is given. All values must be stored to provide a complete historical record and audit trail, i.e. new values must not overwrite existing values.

3. The WorkingHours flag is used to alert the street authority to planned out-of-hours working. The authority can then request additional details (e.g. using the Works Comments facility) if required, e.g. concerns over noise if working at night.

4.7.9Working method

This structure is used to provide information about proposed working methods, including any traffic management arrangements and Traffic Regulation Orders which will impact on the street and wider network. This requires the promoter to properly consider the implications of any applicable designations.

Group	Data element	Comments	Type	Value range
Traffic management	CarriagewayRestriction Type	The type of traffic management (TM) that the promoter plans to use for the works, and the impact on vehicular traffic.	Enumeration	1 None / signing only 2 Traffic control (stop/go boards) 3 Traffic control (two-way signals) 4 Traffic control (multi-way signals) 5 Traffic control (give and take) 6 Traffic control (priority working) 7 Traffic control (convoy working) 8 Lane closure 9 Contra-flow 10 Road closure
	FootwayClosure	Whether or not the traffic management will affect pedestrians.	Enumeration	0 No 1 Yes
	ParkingSuspensions	Whether or not the traffic management will affect parking.	Enumeration	0 No 1 Yes

Notes

1. The CarriagewayRestrictionType value should identify the most severe traffic management type that will be used during the works. In descending order of severity these are: Road closure, Contra-flow, Lane closure, Traffic control (convoy working), Traffic control (priority working), Traffic control (give and take), Traffic control (multi-way signals), Traffic control (two-way signals), Traffic control (stop/go boards) and None/signing only.

4.7.10Site and reinstatement

This structure contains information about reinstatements where an activity involves excavation. It is always combined with spatial location information. Separate details including spatial data must be provided for each individual site.

Group	Data element	Comments	Type	Value range
Site and reinstatement	SiteNumber	Site ID number which must be unique for the works.	Integer (3)	1-999
	ReinstatementType	The type of reinstatement carried out.	Enumeration	1 Interim 2 Permanent 3 Remedial - guarantee period reset 4 Remedial - guarantee period not reset 5 Bar hole
	ReinstatementDate	The date that the site was reinstated.	Date	
	SiteLocation	Reinstatement location codes.	Enumeration	1 Carriageway 2 Footway 3 Verge 4 Cycleway 5 Footpath
	ReinstatementLength	Length of reinstatement in metres.	Decimal (6,2)	0-9999.99
	ReinstatementWidth	Width of reinstatement in metres.	Decimal (4,2)	0-99.99
	SiteDepth	Depth of excavation required to determine the guarantee period of the reinstatement.	Enumeration	1 <= 1.5m of cover 2 > 1.5m of cover 3 Site combined with another site 4 Site subsumed by third party reinstatement
	InterimConstructionMethod	The reinstatement construction method.	Enumeration	1 Method B 2 Method C 3 Method D 4 Not applicable

Notes

1. For works on public highways such as footpaths and bridleways the reinstatement classification appropriate to the SiteLocation should be used, e.g. made-up footpaths should be classified as footway, unmade footpaths and bridleways as verges, and metalled highways as carriageway.

2. In situations where two or more sites with interim reinstatement are combined into a single permanent reinstatement, a new site should be created or an existing site updated with the overall dimensions of the permanent reinstatement and each of the other sites should be recorded as “combined” (SiteDepth value = 3).

3. In situations where the promoter is prevented from carrying out planned interim to permanent reinstatement of a site because the road has been resurfaced or because the site has been subsumed within another promoter's works/reinstatement then the affected site should recorded as "subsumed" (SiteDepth value = 4) and there will be no warranty.

4. Construction method applies to interim reinstatement only (ReinstatementType value = 1). See chapter 6 of the *Specification for the Reinstatement of Openings in the Highway*, Second edition, 2002.

5. Diagrams or digital photographs etc. of reinstatements should be referenced in the NotificationAttachment element in the Attachment group.

6. Bar holes count as a single excavation and reinstatement for registration purposes.

4.7.11Inspection units

This structure is used to provide information about inspection units as required by the current Inspections Code of Practice.

Group	Data element	Comments	Type	Value range
Inspection units	EstimatedInspectionUnits	On a notification of works this will be the estimated number of inspection units.	Integer (3)	0 to 999
	ActualInspectionUnits	On a registration this will confirm the actual number of inspection units.	Integer (3)	0 to 999

Notes

1. Estimated inspection units are not required on advance notifications.

4.7.12Directions and restrictions

This structure is used for all timing-related notifications sent by authorities, including Directions on Timing, Restrictions, Duration Challenge or Undue Delay.

The Direction on timing data allows a street authority to specify the dates and times when work may or may not be carried out, allowing for irregular timing patterns, e.g. special events.

Group	Data element	Comments	Type	Value range
Response deadline	DeadlineDatim	Deadline date and time for complying with an Undue Delay and Proposed Restriction following Street Works notifications.	dateTime	See timing rules in section 8
Restriction times	RestrictionEndDate	End date of a s58 or s58A restriction for a specified street.	Date	
	RestrictionDuration	The duration in months of a proposed restriction	Integer (2)	1-60 (see notes below)
Duration challenge	AuthorityDurationEstimate	The street authority's estimate in consecutive working days (Reasonable Period).	Integer (3)	1-999

Notes

1. The NotificationComments element should be used for any supporting explanation etc.

2. Regulations prescribe the maximum duration of restrictions. The maximum duration of a restriction following substantial road works depends on the nature of the works; the maximum duration is 5 years (60 months). The maximum duration of a restriction following substantial street works is as follows:

Street criteria	Maximum duration
Traffic-sensitive streets and streets in road category 0, 1 or 2 which are not traffic-sensitive streets	1 year
Streets in road category 3 or 4 which are not traffic-sensitive streets	6 months

4.7.13Fixed Penalty Notice

This structure is used for the issue of fixed penalty notices.

Group	Data element	Comments	Type	Value range
FPN	FPNnumber	A unique reference for each FPN allocated by the issuing authority. Consists of the authority's Organisational Prefix, District Number plus an FPN serial number (1-999999) represented as numeric characters.	String (11)	
	FPNoffenceCode	The offence code as defined in the regulations.	Enumeration	1 An offence under s54(5) 2 An offence under s55(5) 3 An offence under s55(9) 4 An offence under s57(4) 5 An offence under s70(6) consisting of a failure to comply with subsection (3) or (4A) 6 An offence created by regulations made under s74(7B) 7 An offence created by regulations made under s74A(11) 8 Working without a permit 9 Working in breach of permit conditions
	FPNoffenceDate	The date that the alleged offence was committed.	Date	
	FPNlocation	Describes the location of the offence.	String (200)	
	FPNauthorisedOfficer Name	The name of the department, section or authorised officer issuing the FPN.	String (30)	

Notes

1. Details of payment methods and the contact name and address for representations must be provided in the street authority's OD data.

2. The NotificationComments field should be used to provide details of the alleged offence.

4.7.14Works contacts

This structure is used for providing works contact details where required in particular notifications.

Group	Data element	Comments	Type	Value range
Works contacts	PromoterName	The name of the owner organisation.	String (60)	
	PromoterAddress (**2-5**)	The postal address of the owner organisation.	String (35)	
	PromoterTelephone Number	A telephone number for the owner organisation.	String (20)	
	PromoterPostCode	The post code of the promoter	String (8)	
	ContractorName	The name of the agent, i.e. prime contractor.	String (60)	
	ContractorAddress (**2-5**)	The postal address of the agent organisation.	String (35)	
	ContractorTelephone Number	A telephone number for the agent organisation.	String (20)	
	ContractorPostCode	The post code of the contractor	String (8)	

Notes

1. The promoter details should be specified if different from the organisation identified in the works prefix. The contractor is the prime contractor responsible for undertaking the works.

2. Promoter and contractor names should be organisation names, not names of individuals. Promoter and contractor names and addresses may be visible to the general public. The Promoter and contractor telephone numbers may be general or personal numbers.

4.7.15Operational districts (OD) data

This structure is used to provide information about organisations involved in the exchange of street works data via EToN.

Authorities and undertakers will continue to submit OD batches to the NSG Hub using the current transfer arrangement (see section 10). OD data can also be exchanged directly (immediately) between authorities and undertakers using an EToN web services transaction. In both cases the OD file also includes area of interest (AOI) polygon data.

Group	Data element	Comments	Type	Value range
Organisation	OrganisationName	The name of the organisation.	String (40)	
	OrganisationID	The SWA_ORG_REF number as assigned by DfT.	Integer (4)	See DfT data capture codes
	OrganisationPrefix	The SWA_ORG_PREFIX for the organisation as assigned by DfT.	String (2)	
District	DistrictName	The name of the District.	String (60)	
	VersionCreatedDatim	Date and time the District was created or last updated.	dateTime	
	DistrictID	Unique district reference number created by the organisation.	Integer (3)	1-999
	DistrictFunction	The function of the district involved in exchange of street works information.	Enumeration	1 Street Authority (NRSWA) 2 Highway Authority (works promoter) 3 Utility 4 Private Street Manager 5 Transport Authority 6 Bridge Authority 7 Sewer Authority 8 Street Naming Authority 9 Permit Authority
	DistrictPermitSchemeID	The national permit scheme reference	String (20)	
	DistrictClosedDate	The date on which the district was closed.	Date	
	DistrictFTPserverName	FTP address for receiving batch file transfers (still required for inspections data).	String (100)	
	DistrictFTPserverIP address	The IP address for service of notifications (still required for inspections data).	String (15)	Standard IP address dotted decimal format A,B,C,D where A,B,C and D represent the first, second, third and fourth elements of an IP address respectively. The value in each element must be numeric and in the range 0 to 255 inclusive.
	DistrictFTPdirectory	The directory name on the FTP server (still required for inspections data).	String (50)	

Group	Data element	Comments	Type	Value range
	DistrictNotificationsURL	Web service URL for exchange of notifications using XML.	String (256)	
	AttachmentURLprefix	The base URL of the FTP site used for viewing and downloading of documents that are 'attached' to notifications.	String (256)	
	DistrictFaxNumber	Fax number for the district, used solely for receiving notifications in the event of system failure etc.	String (20)	
	DistrictPostalAddress (**2-5**)	Postal address for the district.	String (35)	
	DistrictPostCode	Post code for the district.	String (8)	Including spaces
	DistrictTelephoneNumber	Telephone number for the district.	String (20)	
	OutOfHoursArrangements	Applies to street authorities only. Indicates if the authority can receive and respond to notifications during non-working hours.	Enumeration	0 No 1 Yes
	FPNdeliveryURL	Web service URL for receiving FPNs. Applies to works promoters only.	String (256)	
	FPNdeliveryEmailAddress	Email address for delivery of FPNs. Applies to works promoters only.	String (255)	
	FPNdeliveryFaxNumber	Fax number for the delivery of FPNs. Applies to works promoters only.	String (20)	
	FPNdeliveryAddress (**2-5**)	Postal address for the delivery of FPNs. Applies to works promoters only.	String (35)	
	FPNdeliveryPostCode	Post code for the delivery of FPNs. Applies to works promoters only.	String (8)	Including spaces
	FPNpaymentURL	URL for payment of FPNs by credit card via the authority's website. Applies to street authorities only.	String (256)	
	FPNpaymentTelephone Number	Contact telephone number for payment by credit or debit card. Applies to street authorities only.	String (20)	
	FPNpaymentBankName	Bank name for payment of FPNs by BACS. Applies to street authorities only.	String (40)	
	FPNpaymentSortCode	Sort code for payment of FPNs by BACS. Applies to street authorities only.	String (6)	Numeric values in the format nnnnnn
	FPNpaymentAccount Number	Account number for payment of FPNs by BACS. Applies to street authorities only.	String(8)	
	FPNpaymentAccountName	Account name for payment of FPNs by cheque (post or in person). Applies to street authorities only.	String (40)	
	FPNpaymentAddress (**2-5**)	Postal address for payment of FPNs by cheque (by post). Applies to street authorities only.	String (35)	

Group	Data element	Comments	Type	Value range
	FPNpaymentPostCode	Post code for payment of FPNs by cheque (by post). Applies to street authorities only.	String (8)	
	FPNcontactName	Name of the department, section or officer to whom representations should be made. Applies to street authorities only.	String (30)	
	FPNcontactAddress (**2-5**)	Postal address for representations in writing. Applies to street authorities only.	String (35)	
	FPNcontactPostCode	Post code for representations in writing. Applies to street authorities only.	String (8)	
	FPNcontactTelephone Number	Telephone number for department, section or officer to whom representations should be made. Applies to street authorities only.	String (20)	

Notes

1. The district name should consist of organisation name and location in order to provide a self-contained description.

2. The FPNdeliveryURL element is used to specify the address for receiving FPNs via EToN, if required. The value of FPNdeliveryURL can be the same as that for DistrictNotificationsURL, or a separate address. A null value means that the undertaker does not wish to receive FPNs via EToN.

3. The OutOfHoursArrangements element will allow promoters to know whether or not initial notifications for Immediate works commenced outside normal working hours have to be sent within 2 hours. This may be helpful to promoters in some situations, e.g. allowing more time to obtain correct information for the notification, particularly where undertakers have limited out-of-hours cover themselves for noticing.
   Systems should attempt to send notifications as soon as possible irrespective of this flag. If notifications cannot be sent via EToN and this flag is set then notification must be served by some other means. If this flag is not set then systems should attempt to resend notifications via EToN from 8am on the next working day.

4. Application layer protocol prefixes (e.g. “http://” and “ftp://”) must be included in URLs.

5. The DistrictFTPserverName value must **not** include the application layer protocol prefix “ftp://”

4.7.16Activity Conditions

This structure is used to provide information about permit conditions.

Group	Data element	Comments	Type	Value range
ActivityConditions	**ConditionType**	Enumerated condition classifications, as defined by the DfT	Enumeration	1. Date Constraints 2. Time Constraints 3. Out of Hours Work 4. Material and Plant Storage 5. Road Occupation Dimensions 6. Traffic Space Dimensions 7. Road Closure 8. Light Signals and Shuttle Working 9. Traffic Management Changes 10. Work Methodology 11. Consultation and Publicity 12. Environmental 13. Local
	ConditionText	Any text associated with the conditions specified	String (500)	

5.NOTIFICATION DEFINITION

5.1General

To ensure that EToN operates efficiently using XML web services, each transaction will involve transmission of only the minimum necessary amount of data, i.e. successive notifications will not contain (repeat) data already provided in previous notifications. Sending and receiving systems must therefore automatically manage the associated data in order to 'reconstitute' each formal notification and provide users with the full information necessary to correctly interpret the notification in accordance with statutory requirements. This is a fundamental change from previous EToN implementations.

The term "transaction" is used in relation to EToN web services (see section 7) rather than the higher level business processes.

The term "notification" is used to generically describe messages between parties, which includes Notices issued under NRSWA and Permit related transactions.

EToN 5 will support the following transaction types:

1. Send a notification

2. Send OD/AOI data

3. Get identity data (EToN Ping)

4. Get restrictions data

Transactions 1-2 involve sending (pushing) data to the required recipient organisation(s) whilst transactions 3-4 involve getting (pulling) data from a single organisation. This section defines the data content associated with each transaction (i.e. the data payload in each SOAP request and response message, as appropriate).

Table 5.1 identifies all of the individual notifications to be supported by EToN 5. This includes all of the notification-related transactions listed in Table 3.1 plus additional supporting transactions related to the new functionality described above.

Notifications with the same or very similar data content are grouped by notification type as shown. The use of an explicit type number will allow receiving applications to unambiguously identify incoming notification types without the need for complex logic to 'decode' the data. The following notification data definitions contain any rules necessary to identify individual notifications. Separate notification types are defined for withdrawal of street authority notifications, i.e. FPNs.

Notification types with the same or very similar data content are further grouped as shown.

Table 5.1 List of notification groups and types

Notification/group name	Type no.	Individual notification name
Forward Planning Information	0100	
New Activity	0200	Initial Notice
	0210	PAA (Major) / Permit Application (Non-major)
Activity Confirmation	0300	Confirmation Notice
	0310	Permit Application
	0311	Variation Application
Actual Start Date	0400	
Revised Duration Estimate	0500	Revised Duration Estimate
	0510	Duration Variation Application (Works in Progress)
Works Stop	0600	
Registration of Reinstatement	0700	Partial Registration
	0701	Full Registration
Bar Hole Registration	0800	
Cancellation	0900	
Works Status Correction	1000	Revert Actual Start
	1001	Revert Work Stop
Works Data Alteration	1100	Error Correction
	1110	Works Data Variation
Duration Challenge	1200	
Duration Challenge Non-acceptance	1300	
Informal Overrun Warning	1400	
Works Comments	1500	
Directions and Permit Responses	1600	Direction on Timing
	1601	Direction on Placing Apparatus
	1602	Undue Delay
	1610	Grant PAA
	1611	Grant Permit
	1612	Grant Permit Variation
	1613	Refuse Permit / PAA / Variation
	1615	Revoke Permit (Proposed Works)
	1616	Authority Imposed Variation
	1617	Revoke Permit (Works in Progress)
Restrictions	1700	Proposed Restriction (Road Works)
	1701	Restriction in Force (Road Works)
	1702	Proposed Restriction (Street Works)
	1703	Restriction in Force (Street Works)
Intention to Issue a Street Works Licence	1800	
Unattributable Works	1900	
Unattributable Works Response	2000	Unattributable Works Response - Acceptance
	2001	Unattributable Works Response – Non-acceptance
Fixed Penalty Notice	2100	Fixed Penalty Notice
	2101	Fixed Penalty Notice Withdrawal
FPN Comments	2200	
Operational Districts Data	2300	
EToN Ping	2400	
Get Restrictions	2500	

5.2 Notification data definitions

The following sub-sections define the structure and data content of the notification(s) in each group in the order listed in Table 5.1 above. The associated XML schemas define the structures to be used for data transport.

The tables also define any rules necessary to distinguish different notifications.

The tables define the following for each notification type:

1. The applicable groups and the applicable data elements within each group. Individual notifications within a group may involve different sub-sets of elements.

2. Group obligation, i.e. the requirement for including a group or sub-set of elements. Obligation is indicated as: "**m**" for mandatory, "**o**" for optional and "**c**" for conditional.

3. Cardinality, i.e. the number of instances of each element. Cardinality is indicated as either "**1**", "**1-n**" or "**0-n**" where n is any number, e.g. number of sites.

4. Element obligation, i.e. the requirement for providing a value for an element within an applicable group or sub-set of elements. Obligation is indicated as above.

5. Any conditional rules (obligation = conditional) for including groups and elements, and associated data validation rules.

Explanatory notes and further rules are included as appropriate after each table.

Where a value is provided, it should conform to the description or value range as defined in section 4. A conditional element should contain a value if the described conditions are met.

Where data is not relevant then the XML element should not be supplied at all. In the case of numeric fields a 0 (zero) should only be supplied if it is a valid data value.

Providing a null value for an element (as distinct from not providing the element at all) is used as the means of indicating that the previous (i.e. current) value of that element is replaced with a null value; any previous values must still be retained for audit trail.

In the case of optional elements a null value may be provided to indicate that a previous value for that element should be removed. This rule does not apply to the following optional elements as these elements relate to the specific notification:

1. Copy Recipients

2. Notification Comments

3. Agreements

5.2.1Forward Planning Information

This structure is used for submission of forward planning information.

It contains a sub-set of the data elements included in the New Activity notification (see 5.2.2). All groups apply to both undertakers and highway authorities.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0100.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationRestricted	m	
			NotificationComments	o	
Attachment	o	0-n	NotificationAttachment	m	
Project	o	1	ProjectReference	m	
			ProjectDescription	o	
Works	m	1	WorksReference	m	Promoter prefix must be for the same organisation and district as specified for the sender.
			NumberOfPhases	o	
			ChargeCategory	o	
			WorksDescription	m	
Street	m	1	USRN	c	Not supplied if notifying works in a provisional street.
			ProvisionalStreetName	c	Must be provided if notifying works in a provisional street (USRN not supplied).
			ProvisionalStreetLocality	c	May be provided if a provisional street.
			ProvisionalStreetTown	c	Must be provided if a provisional street.
			ProvisionalStreetCounty	c	Must be provided if a provisional street.

Spatial location (works)	m	1	LocationFeatureType	c	Must be provided if a provisional street, may be provided in other circumstances.
		1-n	LocationCoordinates	c	Must be supplied if a value for LocationFeatureType is supplied.
		1	LocationDescription	m	
Activity timing	m	1	ProposedStartDate	m	See timing rules in section 8.
			EstimatedEndDate	m	
Traffic management	o	1	CarriagewayRestrictionType	o	
			FootwayClosure	o	
			ParkingSuspensions	o	
Works contacts	o	1	PromoterName	m	
		2-5	PromoterAddress	m	
		1	PromoterPostCode	o	
			PromoterTelephoneNumber	m	
	o	1	ContractorName	m	
		2-5	ContractorAddress	m	
		1	ContractorPostCode	o	
			ContractorTelephoneNumber	m	

Notes

1. Forward planning information is only submitted for Major works.

2. Promoters are encouraged to provide polygon data.

5.2.2New Activity

This structure is used to advise authorities of new works including advance notice of Major works, notice of starting date of works, notice of Immediate (Urgent and Emergency) works, PAA applications for Major works and initial Permit applications for non-major works.

In the case of Immediate works, the New Activity notification also meets the statutory requirement for a notice of actual starting date (see section 5.2.4).

A New Activity notification should be provided for each phase of a works.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0200 or 0210.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationRestricted	m	
			NotificationComments	o	
Attachments	o	0-n	NotificationAttachment	m	
Agreements	o	1	AgreementReference	o	
			AgreementContact	m	
			AgreementDatim	m	
		1-n	AgreementType	m	Allowable agreement types for the applicable works category (WorksCategory value) are defined in section 4.7.4.
Project	o	1	ProjectReference	m	
			ProjectDescription	m	

Works	m	1	WorksReference	m	Promoter prefix must be for the same organisation and district as specified for the sender.
			WorksCategory	m	
			NumberOfPhases	m	
			ChargeCategory	m	
			WorksDescription	m	
Phase	m	1	PhaseType	m	
Street	m	1	USRN	c	Not supplied if notifying works in a provisional street.
			ProvisionalStreetName	c	Must be provided if notifying works in a provisional street (USRN not supplied).
			ProvisionalStreetLocality	c	May be provided if a provisional street.
			ProvisionalStreetTown	c	Must be provided if a provisional street.
			ProvisionalStreetCounty	c	Must be provided if a provisional street.
	o	0-n	ApplicableDesignation	m	Not supplied if notifying works in a provisional street.
Spatial location (works)	o	1	LocationFeatureType	m	Spatial data should be provided for all initial notifications except secondary promoter works (ChargeCategory=6) . Line or polygon data should be provided for Major activities (WorksCategory value = 1).
		1-n	LocationCoordinates	m	
	m	1	LocationDescription	m	
Activity timing	m	1	ProposedStartDate	c	Mandatory for non-Immediate activities; not required for a notification of Immediate works. See timing rules in section 8.
			EstimatedEndDate	m	
			ActualStartDate	c	Only applicable to Immediate (Urgent or Emergency) activities in which case both must be supplied.
			StartTime	c	
			WorkingHours	m	
Traffic management	m	1	CarriagewayRestrictionType	m	
			FootwayClosure	m	
			ParkingSuspensions	m	
ActivityConditions	c	1	ConditionText	o	Only applicable to Permit / PAA Applications (0210)
		0-n	ConditionType	m	
Inspection units	m	1	EstimatedInspectionUnits	m	
Works contacts	o	1	PromoterName	m	
		2-5	PromoterAddress	m	
		1	PromoterPostCode	o	
			PromoterTelephoneNumber	m	
	o	1	ContractorName	m	
		2-5	ContractorAddress	m	
		1	ContractorPostCode	o	
			ContractorTelephoneNumber	m	

Notes

1. The NotificationRestricted value is provided in the initial notification and applies to all subsequent notifications unless modified in a subsequent notification or a correction notification.

2. The Estimated InspectionUnits value should be zero for activities not involving excavation or works undertaken by secondary promoters, i.e. laying apparatus only (ChargeCategory value = 8).

3. ActualStartDate and Time for Immediate works: Immediate works covers Urgent works which might be planned before works have started. It is assumed that street authorities would want to be notified of these works as soon as possible (Note that this could be in the future for certain types of work).

4. If two or more PAA transactions are sent, without the preceding one(s) being responded to, the most recent application completely supersedes the previous applications, in both data content and response times.

5. The Permit Application (Notification Type 0210) may only be used on the initial application for the phase. The Variation Application notification type must be used on all subsequent applications, even if the permit was not originally granted / deemed.

5.2.3Activity Confirmation

This structure is used for confirmation or revision of proposed start and end dates. Where a permit regime is in force this notification may be used to apply for the permit.

This structure may also be used to apply for permit variations for all activity types.

The notification can also be used to update particular data items provided in an New Activity notification without the need for a separate correction notification.

Group			Data element		
Name	Obligation	Cardinality	Name	Obligation	Rules
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0300, 0310 or 0311.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationRestricted	o	Updates value provided in previous notifications if present.
			NotificationComments	o	
Attachments	o	0-n	NotificationAttachment	m	
Agreements	o	1	AgreementReference	o	
			AgreementContact	m	
			AgreementDatim	m	
		1-n	AgreementType	m	Allowable agreement types are defined in section 4.7.4
Project	o	1	ProjectReference	m	
			ProjectDescription	m	
Works	m	1	WorksReference	m	
			NumberOfPhases	o	Updates value provided in previous notifications if present.
			ChargeCategory	o	
			WorksDescription	o	
Street	o	1	USRN	m	Can only be provided if the previous notification was on a provisional street.

	o	0-n	ApplicableDesignation	m	All appropriate designations must be supplied.
Spatial location (works)	o	1	LocationFeatureType	m	Updates value provided in previous notifications if present. Must provide values for both elements on a complete replacement basis.
		1-n	LocationCoordinates	m	
	o	1	LocationDescription	m	Updates value provided in previous notifications if present.
Activity timing	m	1	ProposedStartDate	m	
			EstimatedEndDate	m	
			WorkingHours	o	
Traffic management	o	1	CarriagewayRestrictionType	m	Updates values provided in previous notifications if present.
			FootwayClosure	m	
			ParkingSuspensions	m	
ActivityConditions	c	1	ConditionText	o	Only applicable to permits (0310 and 0311) Updates must be supplied on a complete replacement basis.
		0-n	ConditionType	m	
Inspection units	o	1	EstimatedInspectionUnits	o	
Works contacts	o	1	PromoterName	m	
		2-5	PromoterAddress	m	
		1	PromoterPostCode	o	
			PromoterTelephoneNumber	m	
	o	1	ContractorName	m	
		2-5	ContractorAddress	m	
		1	ContractorPostCode	o	
			ContractorTelephoneNumber	m	

Notes

1. A Notification Type 0310 (Permit Application) may be issued whilst a PAA (New Activity for Major Works) is outstanding, and neither granted nor deemed. In the absence of clear legal guidance it is suggested that the neither the permit nor PAA application should be regarded as deemed until the later of the Permit and PAA application response times.

2. The Permit Application notification type may only be used on the initial application for the phase. The Variation Application notification type must be used on all subsequent applications, even if the permit was not originally granted / deemed. If the Variation application transaction is sent, before the preceding Permit application has been responded to or deemed, the variation application should not be regarded as deemed until the later of the Permit and variation application response times. A rejection will apply to both the original application and the variation.

5.2.4Actual Start Date

This structure is used to notify the actual start date of planned works.

The notice can also be used to update particular data items provided in the previous notification(s).

Note that this transaction cannot be used to change the duration of a permit.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0400.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Works	m	1	WorksReference	m	
Activity timing	m	1	ActualStartDate	m	
Works contacts	o	1	PromoterName	m	Updates value provided in previous notifications if present.
		2-5	PromoterAddress	m	
		1	PromoterPostCode	o	
			PromoterTelephoneNumber	m	
	o	1	ContractorName	m	
		2-5	ContractorAddress	m	
		1	ContractorPostCode	o	
			ContractorTelephoneNumber	m	

Notes

1. Updates to contact details will allow for changes in contractors and individuals which might reasonably occur in practice.

5.2.5Revised Duration Estimate

This structure is used to notify a revised duration of works either before the works have started (NRSWA only) or whilst works are in progress.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0500 or 0510.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	m	
Agreements	o	1	AgreementReference	o	May only be specified for notification type 0500
			AgreementContact	m	
			AgreementDatim	m	
		1-n	AgreementType	m	Allowable agreement types are defined in section 4.7.4. Only applicable to notification type 0500
Works	m	1	WorksReference	m	
Activity timing	m	1	EstimatedEndDate	m	
ActivityConditions	c	1	ConditionText	o	Only applicable to Duration Variation Applications (0510)
		0-n	ConditionType	m	

Notes

1. Notification comments must include an explanation of the reasons for the revised duration estimate.

2. The EstimatedEndDate value is relative to the last start date provided

3. Notification Type 0500 may still be used in permitting scenarios to agree the reasonable period, without varying the permit end date, following a duration challenge.

5.2.6Works Stop

This structure is used to notify the end of a phase.

Works Clear and Works Closed notices are identified as separate notices in the Code of Practice. However, there is no requirement to distinguish between these notices in EToN as clear/closed status can be inferred from reinstatement registration information.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0600.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Works	m	1	WorksReference	m	
			ChargeCategory	o	Updates value provided in previous notifications if present.
Activity timing	m	1	ActualEndDate	m	

Notes

1. The ChargeCategory value can be changed to indicate if no excavation actually took place and therefore no registration will be provided.

5.2.7Registration of Reinstatement

This structure is used to supply reinstatement details, known as registration notices (not to be confused with the requirements for registering activities/works). Registration of reinstatements by undertakers is a statutory requirement. Registration of reinstatements by Highway Authorities is at their own discretion. A separate transaction (see section 5.2.8) is used for registering bar holes and reinstatements associated with pole testing where a New Activity notification is not required.

Registration notices are supplied for interim and permanent reinstatements. This includes reinstatements following 'normal' works, including remedial works. A Registration of Reinstatement notice can also be used to register bar holes that did not result in excavation if they were in the same street as the main excavation(s)

There are 2 types of notification for normal works:

1. A partial registration, containing details for one or more sites, with one or more other sites still to be registered. There can be zero, one or more partial registrations for a works/phase. A partial registration can include updates or corrections to existing site data. A partial registration cannot follow a full registration for the same phase.

2. A full registration containing details for one or more sites, with no more sites to be registered. A full registration can include updates or corrections to existing site data on a complete replacement basis. There must be at least one full registration for each phase where excavation took place, as indicated by the ChargeCategory value in the Works Stop notice. A full registration must contain all known site information for the current and previous works phases.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different. .
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0700 or 0701.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Attachments	o	0-n	NotificationAttachment	m	

Works	m	1	WorksReference	m	
Site and reinstatement	o	0-n	SiteNumber	m	
			SiteLocation	m	
			ReinstatementType	m	Set to 2 (Permanent) if SiteDepth value = 3 or 4 (Subsumed or Combined site).
			ReinstatementDate	c	Not supplied if SiteDepth value = 3 or 4.
			SiteDepth	c	Not supplied for bar holes (Reinstatement Type value = 5).
			InterimConstructionMethod	c	Applies to interim reinstatement only (ReinstatementType value = 1). Not supplied if SiteDepth value = 3 or 4. Optional for sites that were registered under EToN 3
			ReinstatementLength	c	Not supplied for bar holes (Reinstatement Type value = 5). Not supplied if SiteDepth value = 3 or 4.
			ReinstatementWidth	c	
			Spatial location (see table below)	c	Not required for SiteDepth value = 3 or 4 or sites that were registered under EToN 3.
			Site Attachments (see table below)	o	
Inspection units	c	1	ActualInspectionUnits	m	Mandatory for a Full Registration (NotificationType 0701).

Spatial location	1	LocationFeatureType	m	Can be any feature type if reinstatement does not exceed 10 metres in length (ReinstatementLength value <= 10). Should not be a point feature if reinstatement exceeds 10 metres in length (ReinstatementLength value > 10).
	1-n	LocationCoordinates	m	
	1	LocationDescription	m	
Site Attachments	0-n	NotificationAttachment	m	

Notes

1. Reinstatement and associated spatial location data should be provided for each site.

2. If an Immediate Remedial is proposed immediately following the Stop notice for a previous phase the full Registration for the results of both the previous phase and the remedial phase may be submitted together.

3. Site and reinstatement details are defined as optional (cardinality 0-n). This enables a Full Registration (NotificationType value = 0701) to be sent with no sites as a mechanism to remove any site registrations that had been recorded on a previous notice in error. Once a site has been removed in this manner it's SiteNumber cannot be re-used

5.2.8Bar Hole Registration

This structure is used to supply reinstatement details for bar holes in a street that did not result in full works. It is also used to supply reinstatement details for excavations associated with pole testing where a New Activity notification was not required.

A Bar Hole Registration notice can be resent to update or correct details. There can be multiple bar hole or pole test sites in a single notice (street).

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Notification	m	1	NotificationType	m	Must be 0800.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Attachments	o	0-n	NotificationAttachment	m	
Works	m	1	WorksReference	m	
Street	m	1	USRN	c	Not supplied if notifying works in a provisional street.
			ProvisionalStreetName	c	Must be provided if notifying works in a provisional street (USRN not supplied).
			ProvisionalStreetLocality	c	May be provided if a provisional street.
			ProvisionalStreetTown	c	Must be provided if a provisional street.
			ProvisionalStreetCounty	c	Must be provided if a provisional street.
Site and reinstatement	m	1-n	SiteNumber	m	
			SiteLocation	m	
			ReinstatementDate	m	
			Spatial location (see table below)	m	
			Site Attachments (see table below)	o	
Inspection units	m	1	ActualInspectionUnits	m	

Spatial location	1	LocationFeatureType	m	
	1-n	LocationCoordinates	m	
	1	LocationDescription	m	

Site Attachments	0-n	NotificationAttachment	m	

5.2.9Cancellation

This structure is used for three types of cancellation:

1. Cancellation of planned activities; this includes voluntary cancellation of potential works notified in Forward Planning Information and both voluntary and statutory cancellation of proposed activities notified in a New or Confirmed Activity.

2. Cancellation of Immediate activities where a New Activity notification is sent in error.

3. Cancellation of restrictions, i.e. proposed and in force.

Works **cannot be cancelled** if any of the following notices have been sent or received since the New Activity (Immediate) notification:

a. Works Stop (even if a Works Status correction was subsequently issued)

b. Registration Notice (even if a full Registration notice with no sites has been sent).

c. Undue Delay.

An Immediate activity can be cancelled if none of the above-mentioned notices have been sent; other activities can only be cancelled after an Actual Start Date notice has been sent if a Works Status Correction has been sent to restore the activity to a pre-start status.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	

Notification	m	1	NotificationType	m	Must be 0900.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Works	m	1	WorksReference	m	
			CancelledWorksStatus	o	

Notes

1. A Cancellation is used to meet the requirements for s54(4A) and s55(8) statutory cancellation notices where the works are permanently cancelled or are being re-scheduled for a future date.

2. If the cancellation relates to a restriction or the **first phase** of an activity then the WorksReference value specified in a Cancellation notification must not be reused.

3. Only the first cancellation notification received for a phase has any meaning in the context of the technical specification.

5.2.10Works Status Correction

This structure is used for reversion of Actual Start Date (Major, Standard and Minor planned works) and Works Stop Date notices (all works) issued in error or with incorrect data.

An Actual Start notice **cannot be reverted** if any of the following notices have been sent or received since the Actual Start notice:

a. Works Stop (even if the Works Stop notice was subsequently reverted)

b. Registration notice (even if a full Registration notice with no sites has been sent)

c. Undue Delay.

Registration of Reinstatement Notices and Bar Hole Registration Notices sent subsequent to a Works Stop notice remain valid if the Works Stop notice is reverted. A Works Stop notice **cannot be reverted** if a New Activity notification for the next phase has been sent.

The prior agreement of the street authority is always required for Works Status Correction notifications.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1000 or 1001.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	m	
Agreements	m	1	AgreementReference	o	
			AgreementContact	m	
			AgreementDatim	m	

		1	AgreementType	m	Allowable agreement types are defined in section 4.7.4.
Works	m	1	WorksReference	c	

Notes

1. The facility is provided to correct genuine mistakes and users should note that if an Actual Start notice is invalidated then in the case of NRSWA the original validity period will still apply; in the case of permits the dates revert to what they were prior to the Actual Start Notice.

5.2.11Works Data Alteration

Works Data Alteration applies to promoters only.

This structure is used for correcting errors or otherwise amending values in existing data provided in previous works notifications, at any time. It contains correctable data elements and non-correctable data elements (i.e. those that are part of the notification itself) as identified in the Rules column in the following table.

The prior agreement of the street authority is required for changes to particular data elements as identified in the Rules column.

Note that the values of some data elements can be amended in successive notifications (i.e. throughout the life-cycle of a works/phase) without the need to use this separate Works Data Alteration transaction. Prior to the works starting, one would expect the Works Data Alteration to be used for minor corrections, by agreement, and the Activity Confirmation to be used where there are significant changes to the circumstances of the works.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different. Part of the Works Data Alteration notification.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1100 or 1110.
			NotificationSequenceNumber	m	Part of the Works Data Alteration notification.
			VersionCreatedDatim	m	
			NotificationRestricted	o	Can be updated without agreement
			NotificationComments	o	Part of the Works Data Alteration notification.
Attachments	o	0-n	NotificationAttachment	m	Attachments can be added without agreement.
Agreements	c	1	AgreementReference	o	Part of the Works Data Alteration notification.
			AgreementContact	m	
			AgreementDatim	m	
			AgreementType	m	Allowable agreement types are defined in section 4.7.4.
Project	o	1	ProjectReference	o	These elements can be corrected without agreement. An empty element must be

			ProjectDescription	o	supplied if the information is to be removed. Both elements must be provided or not.
Works	m	1	WorksReference	m	Part of the Works Data Alteration notification.
			WorksDescription	o	Can only be updated with agreement.
Street	o	1	USRN	c	Can only be updated with agreement. This group must be updated on a complete replacement basis (see New Activity for details of valid combinations).
			ProvisionalStreetName	c	
			ProvisionalStreetLocality	c	
			ProvisionalStreetTown	c	
			ProvisionalStreetCounty	c	
	o	1-n	ApplicableDesignation	m	Can only be updated with agreement.
Spatial location (works)	o	1	LocationFeatureType	o	Can only be updated with agreement. Must supply values for both elements on a complete replacement basis.
		1-n	LocationCoordinates	o	
		1	LocationDescription	o	Can only be updated with agreement.
Activity timing	o	1	WorkingHours	o	
Traffic management	o	1	CarriagewayRestrictionType	o	
			FootwayClosure	o	
			ParkingSuspensions	o	
Works contacts	o	1	PromoterName	m	Can be updated without agreement. This group must be updated on a complete replacement basis
		2-5	PromoterAddress	m	
		1	PromoterPostCode	o	
			PromoterTelephoneNumber	m	
	o	1	ContractorName	m	Can be updated without agreement. This group must be updated on a complete replacement basis.
		2-5	ContractorAddress	m	
		1	ContractorPostCode	o	
			ContractorTelephoneNumber	m	

Notes

1. Spatial location data only applies at the works level. Corrections to site location data are handled separately within the registration notification mechanism. In the case of corrections to spatial features, line and area co-ordinates must be provided on a complete replacement basis

2. Where changes are made to one or more data elements within a repeating group then the entire group should be re-submitted, e.g. in the case of corrections to designations data, values for **all** applicable designations must be provided. A single, empty ApplicableDesignation element may be supplied to indicate that no designations are applicable where they had been indicated on a previous notification.

3. A Works Data Variation (Notification Type 1110) still requires a permit grant response to be approved, even if issued with a pre-agreement recorded.

4. Where a change in USRN results in a change of primary recipient, the works should be cancelled and re-submitted. If it is “In Progress”, it must either be closed or a Works Status Correction used to revert it to the Proposed status before it is cancelled and re-submitted.

5.2.12Duration Challenge

This structure is used to send a duration challenge in response to duration estimates provided in any of the following notifications:

1. New Activity notification and ActivityConfirmation notifications (NRSWA only)
2. Revised Duration Estimate / Duration Variation Application.

The following structure only allows the street authority to specify its own estimate of duration in working days rather than an end date.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1200.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	m	
Works	m	1	WorksReference	m	
Duration challenge	m	1	AuthorityDurationEstimate	m	

Notes

1. In the case of permits a Duration Challenge has no impact on the permit dates; it is only used to set the reasonable period for section 74 purposes.

5.2.13Duration Challenge Non-acceptance

This structure is used for sending a notice confirming non-acceptance of the duration estimate provided by the street authority in a duration estimate challenge.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Originator	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1300.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Works	m	1	WorksReference	m	

Notes

1. It should not be possible to send more than one duration challenge non-acceptance notice in response to a particular duration challenge notice.

2. This notice can only be sent in response to an existing duration challenge notice received from an authority. The duration challenge non-acceptance notice will relate to last duration challenge notice received in relation to the current phase of the specified works.

5.2.14Informal Overrun Warning

This structure is used for sending a warning that works have started to attract overrun charges (although undertakers' own notice management systems should provide such alerts).

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1400.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Works	m	1	WorksReference	m	

Notes

1. There are no copy recipients.

5.2.15Works Comments

This structure is used by both promoters and authorities for sending textual comments, linked to a specific Activity or restriction.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1500.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	m	
Works	m	1	WorksReference	m	

Notes

Works comments (NotificationComments element) can be sent by any interested party, i.e. the originator and any recipients of the originating notification (forward planning information and/or New Activity), in response/follow-up to the originating notification and in response to other comments.

5.2.16Directions and Permit Responses

This structure is used for all NRSWA directions and responses to Permit Applications from street authorities in relation to specific works.

All directions given under NRSWA can be corrected by resending the transaction.

Directions on timing can be cancelled by resending a Directions transaction with no time and date values.

The status of the direction must therefore be clearly stated in the NotificationComments element.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1600, 1601 and 1602 for NRSWA, 1610 - 1617 for permits
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	Must be null for all PAA/Permit/Variation grants (Notice Types 1610 – 1612)
Works	m	1	WorksReference	m	
Response deadline	c	1	DeadlineDatim	m	Only applicable to “Undue Delay” (NotificationType 1602) or “Revoke Permit (Works in Progress)” (NotificationType1617). Not supplied if cancelling a previous notification.
Application Sequence No.	c	1	ApplicationSequenceNumber	m	Only applicable when granting or refusing PAAs, Permits and Permit Variations or for an Authority Imposed Variation (NotificationType values 1610-1613 and 1616). Contains the NotificationSequenceNumber from the promoter’s original PAA / Permit / Permit Variation application

Notes

1. These notification types should be copied to all recipients of the originating notification.

2. There can only be one NRSWA direction of each type in effect for a work phase. Where directions are being resent for correction purposes, or revoked (see Table 3.1) then the NotificationComments element should describe the nature of the correction or the reason for revocation.

3. The NotificationComments element should be used for providing information for NRSWA Directions on Timing, Placement of Apparatus and Undue Delay. NotificationComments may be used in Permit Rejections to indicate the conditions that should be applied in a subsequent permit application.

4. In the case of restrictions following substantial street works, the street authority should use the Direction on Timing transaction to give a S58A Schedule 3A 3 direction on starting date in relation to each works in order to control the timing and order in which the works are carried out (see section 8). Each Direction must specify a start date as determined by the street authority and an end date which should be derived from the agreed duration (s55 notice or revised duration estimate). Timing directions are specified in the NotificationComments field. The promoter is not allowed to work on any days that are not included.

5. In the case of s56 and s56(1A) directions (Direction on Timing) or equivalent permit response the authority may optionally indicate in textual form that any revised (increased) estimate of duration that is requested in order to reflect the consequences of the direction may be acceptable, i.e. following discussion and agreement with the undertaker. This is intended to help streamline the process. The Works Promoter may then submit a Revised Duration Estimate (or the equivalent Permit Duration Variation Application), in the expectation that it will be accepted.

6. The Permit Reference is derived from a combination of the WorksReference, ApplicationSequenceNumber and the NotificationSequenceNumber supplied in the permit response. See section 4.5.

7. For responding to permit applications, a Notice Type 1610 “Grant PAA” must always be used as a response to a Notice Type 0210 Major Works PAA. In most cases a Notice Type 1611 “Grant Permit” should be used for response to the first Notice Type 0210 or 0310 “Permit Application”, and a Notice Type 1612 “Grant Permit Variation” should be used to respond to subsequent variation applications. However, receiving systems should treat the 1611 and 1612 notifications as interchangeable, and accept either as a “Grant” response to the specified Application Sequence No.

8. If a permit is revoked, all notices that would be required to bring the phase to an end must be served by the works promoter; i.e. either a Cancellation, Works Stop, or Registration of Reinstatement. Initiating a new phase of the works should be prohibited until this has occurred.

9. An “Authority Imposed Variation” must not be used to respond to any PAA, Permit Application or Variation. It may only be used where a permit has already been granted or deemed. Following the Imposed Variation, and pending any further actions, the “current permit” should be represented by the existing permit annotated with the imposed variation. The only way of formalising any impact of the imposed variation on the permit is for the promoter to submit a variation application, and obtain another granted permit. It is recommended that this is done in most cases. However, systems should also allow for the promoter to submit any further works life-cycle transactions which are valid for the current status of the works (e.g. Cancellation or Actual Start if at Proposed status, Works Stop if currently In Progress, etc.).

5.2.17Restrictions

This structure is used for 'broadcast' of Proposed Restriction and Restriction in Force notifications from street authorities. Note that restrictions data will not be included in the ASD.

A Proposed Restriction notice can be resent to provide updated timing (start date and duration) information, e.g. the initial proposed start date may change significantly if several undertakers wish to complete Major works before the substantial road works. The street authority may also extend the deadline for submissions from undertakers.

Proposed restrictions (NotificationType = 1700 and 1702) can be cancelled by submitting a Cancellation notification. A Restriction in Force (Street Works) direction (NotificationType = 1703) can be revoked by submitting a Cancellation notification.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Copy recipient	m	1-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1700, 1701, 1702, or 1703.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Attachments	o	0-n	NotificationAttachment	m	
Works	m	1	WorksReference	m	This is a unique works reference allocated by the street authority.
			WorksDescription	m	
Street	m	1	USRN	m	
Spatial location (restriction)	c	1	LocationFeatureType	m	Must be supplied for NotificationType values of 1700, 1702 or 1703. Optional for NotificationType 1700 or 1701 if the restriction was proposed or came into force under EToN 3 otherwise must be supplied Only line or polygon feature types may be used.
		1-n	LocationCoordinates	m	
		1	LocationDescription	m	
Response deadline	c	1	DeadlineDatim	o	Only applicable to a Proposed Restriction (Street Works) notice (NotificationType value = 1702). See notes below
Activity timing	c	1	ProposedStartDate	m	Should only be provided in a Proposed Restriction notice (NotificationType value = 1700 and 1702).

Restriction times	m	1	RestrictionEndDate	c	Must be provided in a Restriction in Force notice (NotificationType value = 1701 and 1703).
			RestrictionDuration	c	Must be provided in a Proposed Restriction notice.

Notes

1. Separate notices are required for each street and restriction. The notices should be sent to all affected/interested organisations (see section 6).

2. The WorksDescription element is used to describe the nature and extent of the proposed Major road works or street works.

3. The Spatial location structure is used to define the extent (length/area) of the restriction. In the case of a restriction following substantial street works the extent of the restriction may be significantly greater than the extent of the street works. The LocationDescription element is used to describe the part of the street affected. It is recommended that a polygon is provided in all cases to define the area affected.

4. The ProposedStartDate element is used to specify the expected start date of the proposed substantial (i.e. Major) road or street works.

5. The RestrictionDuration element is used to specify the fixed duration of a restriction in a Proposed Restriction notice and Restriction in Force notice. The RestrictionDuration value in a Proposed Restriction (Street Works) notice must not exceed prescribed limits (see section 4.7.12).

6. When issuing a Restriction in Force notice the street authority may specify the duration as a fixed period (e.g. 10 months). A value must be provided for RestrictionEndDate.

7. If a value for RestrictionDuration is provided in a Restriction in Force (Street Works) notice then it must not exceed the value specified in the preceding Proposed Restriction (Street Works) notice. Where a value for RestrictionEndDate is provided then automatic validation should be applied as far as possible (i.e. works completion date is not known).

8. The time in the DeadlineDatim value should always be set to 16:30 if a date is supplied. The DeadlineDatim is optional for a Proposed Restriction (Street Works) notice. If it is not supplied then the default deadline of 20 days applies.

9. In the case of a response to a GetRestrictions transaction only the Sender identified in the GetRestrictions transaction should be included in the Copy Recipients structure.

5.2.18Intention to Issue a Street Works Licence

This structure is used for notifying undertakers and others likely to be affected of a street authority's intention to issue a street works licence.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Copy recipient	m	1-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1800.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	m	
Project	o	1	ProjectReference	m	
			ProjectDescription	m	
Works	m	1	WorksReference	m	Note that this is a notional reference used to identify the licence allocated by the street authority using normal rules. The actual works carried out under the licence will have a different works reference when they are recorded in the Street Works Register.
			WorksDescription	m	
Street	m	1	USRN	m	
Spatial location (works)	m	1	LocationFeatureType	m	Any feature type can be used.
		1-n	LocationCoordinates	m	
		1	LocationDescription	m	
Activity timing	o	1	ProposedStartDate	m	
			EstimatedEndDate	o	
Works contacts	m	1	PromoterName	m	
		2-5	PromoterAddress	m	
		1	PromoterPostCode	o	
			PromoterTelephoneNumber	m	
	o	1	ContractorName	m	
		2-5	ContractorAddress	m	
		1	ContractorPostCode	o	

			ContractorTelephoneNumber	m	

Notes

1. The originator is the street authority responsible for the street and licence in question.

2. A Licence notice can only contain a single street. In cases where a street works licence applies to more than one street, a notice should be sent to relevant interested parties for each street concerned with separate works references. Each notice should contain a common project reference to allow related notifications and streets to be linked.

3. The WorksReference element should be used to uniquely identify a licence application. Use of a reference will enable exchange of works comments by interested parties.

4. The WorksDescription element should be used to provide details of the proposed works/apparatus and need for ongoing maintenance etc.

5. The ProposedStartDate and EstimatedEndDate elements can be used to give an indication of timing, if known. The Start Date for this street works licence must be before the intended Start Date of the actual works. If an Estimated End date is not supplied, the licence is in effect open-ended; a subsequent notice may be sent with an end date to terminate it. The actual works that is/are recorded must be on separate reference numbers from the licence,

6. The works contacts group is used to provide details of the licensee.

7. Works Comments may be used to respond, if required.

8. A second or subsequent notice of the same type may be issued to effect any required correction. A subsequent Cancellation is also allowed.

5.2.19Unattributable Works

This structure is used by street authorities or relevant (bridge or transport) authorities to notify promoters of works or potential works for which they do not currently have a promoter works reference. This transaction may be used in conjunction with other notifications to meet specific requirements under NRSWA, e.g. it may be used in conjunction with an Inspection to report defective apparatus.

The sender of this notice will generate their own works reference, which may be used on other related transactions. The works comments facility can be used in response to an Unattributable Works notice.

The recipient promoter should respond to this notice by either accepting that the works is theirs, in which case their own works reference will be supplied, or confirming non-acceptance if they do not believe that the works is their responsibility.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 1900.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	m	
Works	m	1	WorksReference	m	
Street	m	1	USRN	m	
Spatial location (works)	m	1	LocationFeatureType	m	
		1-n	LocationCoordinates	m	
		1	LocationDescription	m	

Notes

1. Where this transaction is used to report defective apparatus, the originator is the street authority or relevant authority that identifies the need for the works. The primary recipient is the promoter thought to be the apparatus owner. The copy recipients should include the street authority (if the originator is a relevant authority) and any other relevant authorities.

2. The NotificationComments element may be used to describe the nature of the defect and the required inspection or remedial works. For inspection and non-emergency remedial works this should give an indication of the required timescale for completing the works.

3. The works reference is provided by the originating street authority or relevant authority.

4. The authority issuing the Unattributable Works notice must decide which district within the intended recipient organisation it should be sent to. This would normally be selected from the same set of districts that would be considered for restrictions and section 50 licences, but this is ultimately at the discretion of the authority.

5. The Unattributable Works" transaction may only be directed at one works promoter (identified as the Primary Recipient) at one time. The Unattributable Works may subsequently be sent on the same reference to another primary recipient. Recipients must allow for the notice they receive not being Notice Sequence 1.

6. A second or subsequent notice of the same type may be issued to effect any required correction. However, this can only be prior to a promoter accepting responsibility for the works; after that point, only the promoter can update details of the works.

7. Following the Unattributable Works, in addition to a second correction notice, the only transactions that can be sent are a Cancellation, Unattributable Works Response, Works Comments, and Inspections. Once a response from the promoter accepting the works has been received, a New Activity (for a new works phase), and subsequent works transactions can be sent by the promoter.

8. Normal noticing rules apply in relation to any inspection or remedial works.

5.2.20Unattributable Works Response

This structure is used by the recipient of an Unattributable Works notice to confirm whether or not the works or apparatus are their responsibility.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	All organisation references (i.e. combinations of SWA_ORG_REF and DISTRICT_REF values) must be different.
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Copy recipient	o	0-n	CopyRecipientOrg	m	
			CopyRecipientDist	m	
Notification	m	1	NotificationType	m	Must be 2000 or 2001.
			NotificationSequenceNumber	m	
			VersionCreatedDatim	m	
			NotificationComments	o	
Works	m	1	WorksReference	m	This is the reference supplied by the authority.
			ActualWorksReference	c	This is the undertaker's actual works reference if the undertaker is accepting responsibility (NotificationType value = 2000), otherwise the element is not supplied.

Notes

1. Where the undertaker is required to carry out works, agreement of the works and timescale, including any arrangements for joint site inspections, should then be dealt with on the promoter's actual works reference with retrospective noticing if required.

2. If the recipient accepts the Unattributable Works, and specifies an existing Works Reference, the UW should be abandoned and any associated data (such as inspections) transferred to the specified works.

3. If a promoter receives an unattributable works notice for works that are in a different district from the one notified, the Actual Works Reference prefix in the Response may be different from the sending organisation details

5.2.21 Fixed Penalty Notice

This structure is used for giving and withdrawing FPNs.

The notification only contains the variable data in an FPN. The receiving system must obtain the relevant fixed data from the OD data for the sending organisation.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Notification	m	1	NotificationType	m	Must be 2100 or 2101.
			VersionCreatedDatim	m	
			NotificationComments	m	
Works	m	1	WorksReference	m	
FPN details	m	1	FPNnumber	m	
			FPNoffenceCode	c	For FPNs only (NotificationType value =2100).
			FPNoffenceDate	c	
			FPNlocation	c	
			FPNauthorisedOfficerName	m	

Notes

1. The OD data (see section 4.7.15) allows a separate web services URL to be provided for delivery of FPNs if required.

2. There are no copy recipients.

3. If the FPN is being given in relation to a works for which a notification has been given then the WorksReference value should be that supplied in the notification. If a street authority discovers a works (in progress or completed) that has not been notified then the authority should identify the promoter responsible using an Unattributable Works notice/response. The authority can then issue an FPN using the correct reference. Alternatively (or if the promoter still does not submit a notification), the authority should issue an FPN using their own works reference. Obviously, if the promoter cannot be identified then it will not be possible to issue an FPN.

4. The NotificationComments field should contain a description of the alleged offence including reference to the specific offending notification or, where applicable, the reasons for withdrawing an FPN.

5. FPNoffenceCode values 1, 2, 3, 4, 5 and 6 can apply to notices; values 5, 6, 8 and 9 can apply to permits; 7 cannot apply to either unless lane rental is introduced.

6. The NotificationType value determines the fixed text to be used in the FPN, i.e. the template to be used for producing (displaying or printing) the legal FPN form as shown in the Notices Code of Practice. The FPNoffenceCode value is used to determine the appropriate standard text to describe the offence.

5.2.22FPN Comments labelled

This structure is used for sending FPN related textual comments, optionally linked to a specific FPN.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Sender	m	1	NotificationFromOrg	m	
			NotificationFromDist	m	
Primary recipient	m	1	RecipientOrg	m	
			RecipientDist	m	
Notification	m	1	NotificationType	m	Must be 2200.
			VersionCreatedDatim	m	
			NotificationComments	m	
Works	m	1	WorksReference	m	
FPN details	o	1	FPNnumber	m	

Notes

1. FPN comments can only be sent between the street authority and the works promoter.

2. FPN comments should be used to record an extension to the FPN payment date if agreed by the authority.

5.2.23Operational Districts data

This structure is used for exchange of organisation and operational districts data and area of interest (AOI) data directly between works promoters and authorities via EToN.

Two types of interest polygons are used:

1. To receive copies of all notifications.

2. To receive restriction notices/directions and notices of intention to issue street works licences only.

Type 1 polygons are optional and should only be supplied if/where the promoter Operational District wishes to receive copies of all notifications.

If Type 1 polygons are not supplied, Type 2 polygons may be supplied to ensure that restriction etc. notices are received.

Multiple polygons of either interest type can be sent in a single transaction. Polygons are supplied on a complete replacement basis.

Group			Data element		
Name	**Cardinality**	**Obligation**	**Name**	**Obligation**	**Rules**
Notification	1	m	NotificationType	m	Must be 2300.
Organisation	1	m	OrganisationName	m	
			OrganisationID	m	
			OrganisationPrefix	m	

District	1-n	m	DistrictName	m	
			VersionCreatedDatim	m	
			DistrictID	m	
			DistrictFunction	m	
			DistrictPermitSchemeID	c	Mandatory for permit authorities (DistrictFunction=9); otherwise it must not be provided.
			DistrictClosedDate	o	
			DistrictFTPserverName	c	At least one must be provided.
			DistrictFTPserverIPaddress	c	
			DistrictFTPdirectory	M	
			DistrictNotificationsURL	m	
			AttachmentURLprefix	o	
			DistrictFaxNumber	m	
			DistrictPostalAddress (**2-5**)	m	
			DistrictPostCode	m	
			DistrictTelephoneNumber	m	
			OutOfHoursArrangements	c	Applies to Street and Permit authorities only (DistrictFunction=1 or 9)
		c	FPNdeliveryURL	o	Group applies to DistrictFunction values of 2 or 3 (works promoters) only. Both address and post code values must be provided in case the authority is not able to send by any other method...
			FPNdeliveryEmailAddress	o	
			FPNdeliveryFaxNumber	o	
			FPNdeliveryAddress (**2-5**)	m	
			FPNdeliveryPostCode	m	
		c	FPNpaymentURL	c	Group applies to street and permit authorities only. Details should be provided for at least one method, i.e. payment via BACS, website, cheque (post or in person) or credit card (telephone or in person). See data definition for elements associated with each method.
			FPNpaymentTelephone Number	c	
			FPNpaymentBankName	c	
			FPNpaymentSortCode	c	
			FPNpaymentAccountNumber	c	
			FPNpaymentAccountName	c	
			FPNpaymentAddress (**2-5**)	c	
			FPNpaymentPostCode	c	
		c	FPNcontactName	m	Group applies to street and permit authorities only.
			FPNcontactAddress (**2-5**)	m	
			FPNcontactPostCode	m	
			FPNcontactTelephone Number	m	
		o	Spatial Location (see table below)	o	Used to define the Area of Interest (AOI) polygons for the district.

Spatial location (**1-n**)	1	InterestType	m	
	1	LocationFeatureType	m	Must be a polygon (LocationFeatureType value = 3)
	1-n	LocationCoordinates	m	

Notes

1. The sending district can provide OD data for any districts within the organisation.

2. VersionCreatedDatim is used to derive the version of the OD data.

3. FPNs should be delivered by the first method available in the order: EToN, then email, fax, then post.

4. Multiple AOI polygons of any interest type can be sent in a single transaction. Polygons are supplied on a complete replacement basis.

5. This transaction should be treated on an incremental basis. i.e. the absence of a District from the transaction does not imply that that District no longer exists.

5.2.24EToN Ping

This facility is used to test and troubleshoot end-to-end communications between systems, and to confirm the identity of the recipient (similar to an internet Ping command).

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Primary recipient	m	1	RecipientOrg	m	This identifies the Organisation / District from which a response is expected. This is required as a Web Service may serve more than one District
			RecipientDist	m	

No response or web service denial response could indicate an incorrect IP address in the sender's OD data. The web service client should derive a measurement of round trip time if required.

This structure defines the data that is returned by the receiving web server.

Group			Data element		
Name	**Obligation**	**Cardinality**	**Name**	**Obligation**	**Rules**
Notification	m	1	NotificationType	m	Must be 2400.
Sender	m	1	NotificationFromOrg	m	
			NotificationFromDist	m	
Organisation	m	1	OrganisationName	m	
			OrganisationPrefix	m	
District	m	1	DistrictName	m	

Notes

1. The sender, organisation and district details are for the organisation replying to the Ping.

5.2.25Get Restrictions

This structure is used to request the current details of all proposed and in force Restrictions from a street authority. There is no immediate response to this transaction; details of relevant restrictions will be provided by the street authority using the Restriction transaction defined in section 5.2.17.

Name	Obligation	Cardinality	Name	Obligation	Rules
Notification	m	1	NotificationType	m	Must be 2500.
Sender	m	1	NotificationFromOrg	m	
			NotificationFromDist	m	

Notes:

1. Only the most recent notice relating to each restriction should be sent. The details in the notice should be the same as when the notice was originally sent (e.g. NotificationSequenceNumber and VersionCreatedDatim), but only one Copy Recipient should be included.

6.NOTIFICATION EXCHANGE REQUIREMENTS

6.1Introduction

This section specifies the rules for determining which organisation(s) should receive particular types of notifications. It applies to systems used by any organisation.

The scope includes any bridge and transport authorities and others that have voluntarily set themselves up to send and receive notifications electronically via EToN, e.g. Network Rail. It is assumed that some large developers might also use EToN. Facilities for extending electronic transfer of notifications to all street works licensees and private street managers (e.g. web-based), and transfer of data to central registers are not within the scope of EToN 5.

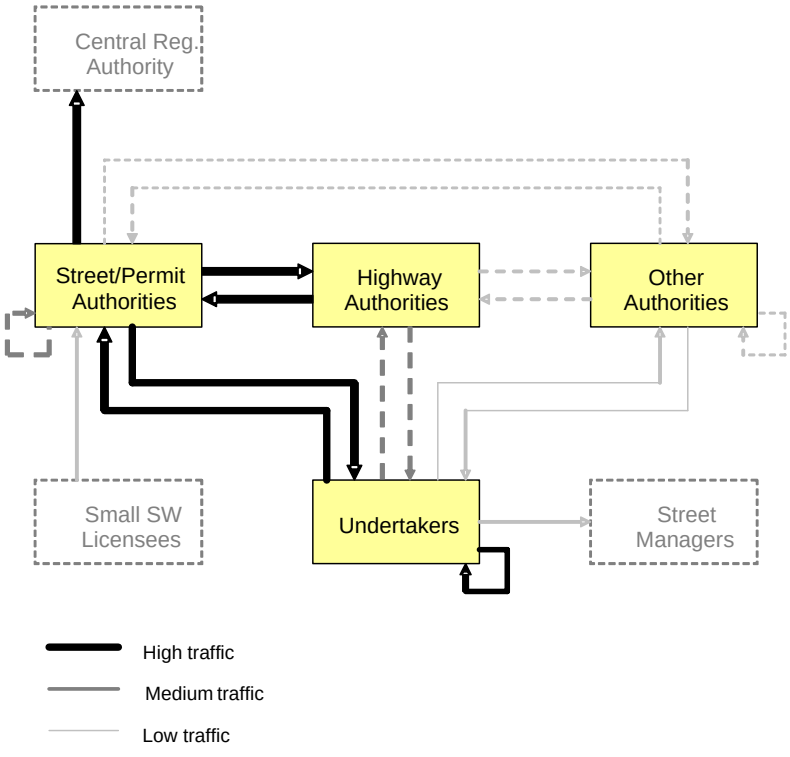


Figure 6.1 Overview of information flows for sending and receiving of notifications via EToN

The main EToN players include:

- All works promoters using EToN, including statutory undertakers, i.e. utilities, street works licensees, transport and bridge authorities, and highway authorities.

- Primary notice authorities that are local highway authorities and so are responsible for co-ordinating street and road works (and other activities) and maintaining a statutory street works register.

- Primary notice authorities that are not local highway authorities: Highways Agency in England; TfL (London); street managers; transport authorities (Network Rail, London Underground Ltd (part of TfL), on-street tramway operators).

- Other relevant authorities, i.e. bridge, transport and sewer authorities.

The above may include agents (alliance partners, contractors etc.) who have delegated responsibility for handling notifications.

Highway authorities should define separate districts for primary notice authorities and highway works functions within the organisation. It is also recommended that Local Highway Authorities create one or more separate districts with a District Function of “Transport Authority” for Private Streets in their area for which they are the Primary Notice Authority.

Notice management systems must allow notifications to be output in ‘paper’ form for sending by fax (paper or electronic) or post, or as an attachment to an e-mail. Where recipients (e.g. private street managers, s50 licensees, some relevant authorities) do not have access to EToN systems, the notification should be sent in paper form. Notifications to copy recipients should still be sent via EToN, setting the primary recipient (RecipientOrg and RecipientDist values) to the Highway Authority that expressed a “Primary Notice Authority” interest in the private street.

Similarly, where the sender does not have access to EToN, the primary notice authority should distribute the incoming notification (received in paper form) to interested parties via EToN.

Regulations require particular notifications to be served on particular organisations (as well as the primary notice authority) including:

- any sewer, transport or bridge authority with an interest in the street

- any organisation with apparatus in the street

- adjacent primary notice authorities

- any promoter that has given advance notification of intended works in that street.

In some cases (e.g. registration of reinstatements) the notification has to be sent to the primary notice authority only.

The Codes of Practice allows for any organisation that has expressed an interest in a street to receive notifications in order to assist co-ordination, or simply as a courtesy. Organisations can provide AOI data (see below) to ensure that they receive copy notifications.

6.2Identification of notification recipients

6.2.1Notifying Works

Notification recipients are determined by reference to the ASD Additional Street Data record and/or AOI polygons (spatial operation) as defined below.

All Additional Street Data records for the USRN in question should be checked. The primary recipient is the primary notice authority identified from the Additional Street Data record INTEREST_TYPE value = 1) for the USRN in question. An INTEREST_TYPE value of 8 indicates copy recipients (all notifications). Copy recipients can be any organisation and district function type. Note that these checks must be carried out before sending each notification, i.e. not just at the start of a phase.

Copy recipients can also be identified from AOI polygon(s) supplied in OD data (downloaded from the NSG Hub and/or received directly via EToN). All OD files held by the sending system for any districts not already identified from Additional Street Data records should be checked. A copy recipient should be selected if the works spatial location feature (point, line or polygon) is **contained within** or **intersects** the relevant AOI polygon (InterestType value = 8).

ASD and AOI data changes or other scenarios within a life cycle of a works can result in both primary and copy recipients changing:

- Changes to interested parties (e.g. new interest identified in latest NSG/ASD update, records added for new streets);
- Changes to the Primary Notice Authority (e.g. during the introduction of a Permit Scheme or where Street Authority responsibilities change)
- Changes to AOI data downloaded from the Hub and/or received directly via EToN;
- Changes to OD data downloaded from the Hub and/or received directly via EToN (e.g. changes to ISP and server URL);
- Changes to notification restriction status (e.g. relaxation of commercial confidentiality following initial advance notification);
- Additional copy recipients may be added on a discretionary basis.

Prior to sending a promoter notification the ASD and AOI data should be checked for changes. Where additional recipients are identified then notifications must be sent to these new organisation districts.

Where the changes within the ASD or AOI would result in any recipient being removed from the notifiable organisation districts then the recipients used on the previous notifications should be used until the permanent reinstatement is completed or works are completed without excavation. However, if the DistrictClosedDate of an operational district is set then notifications should cease immediately after the specified date.

Note that where a promoter identifies additional recipients then all previous notifications for the works should be sent to the new recipient in the correct chronological order.

In the case of responses to promoter notifications, the responder should confine the list of Copy recipients to those that have been identified on any promoter notification for the current phase.

Works Promoters should note that the Primary Notice Authority responsible for the works may have changed since their last notification and so should expect Authority responses, such as Directions or Inspections, from organisations / districts that were not previous primary or copy recipients.

6.2.2Duration Challenge

The primary recipient is the promoter (undertaker or highway authority) of the works.

The copy recipients are those organisation districts identified in the promoter works notifications.

6.2.3Directions and Permit Responses

The primary recipient is the promoter of the works.

The copy recipients are those organisation districts identified in the promoter works notifications.

6.2.4Restrictions and Street Works Licences

There is no primary recipient. Copy recipients are determined in a similar manner to that defined for notifying Works.

A copy recipient should be included where the corresponding INTEREST_TYPE value = 8 or 9, and where identified from AOI polygons with InterestType value = 8 or 9.

Copy recipients must include any promoter who has given advance notification. However, there can be no guarantee that all works promoters (that have given advance notification) will have registered interest in the street via Additional Street Data records or AOI polygons. Recipients should therefore be identified from the local notice management system database (i.e. check all initial notifications for the USRN in question) as well as from ASD and AOI.

6.2.5Fixed Penalty Notices

Fixed penalty notices are sent to works promoters. There are no copy recipients.

Current OD data should be checked to identify the preferred method of delivery (see section 4.7.15), i.e. assuming that the primary notice authority wishes to use EToN where possible. Where the preferred method is EToN then the corresponding web service URL should be obtained from the OD data.

The primary recipient is the promoter responsible for the works/notification for which the FPN is being given. See section 5.2.21 for a description of the procedure to follow where an existing works/notification is not available.

6.2.6Overrun Warning

The primary recipient is the promoter (undertaker or highway authority) of the works in question.

There are no copy recipients.

6.2.7Works Comments

In the case of works comments, the primary recipient can be the promoter or any organisation with an interest in the works.

Copy recipients of works comments are determined from the previous promoter works notifications and can include the promoter of the works.

6.2.8FPN Comments

FPN comments are private between the promoter and primary notice authority.

Current OD data should be checked to identify the URL for sending FPN comments to promoters.

6.2.9Unattributable Works

See section 5.2.19 for details on how to determine the recipients for this type of notice.

6.2.10Unattributable Works/Response

The primary recipient is the originating authority.

The copy recipients are the other street and/or relevant authorities identified in the originating Unattributable Works notice.

7.WEB SERVICES

7.1General

All ETоN 5 transactions (i.e. excluding data interchange with the NSG Hub) will use XML web services, involving direct application-to-application interaction.

The term “service” is used to mean applications that can respond to external calls for functionality. Services in service oriented architecture are similar to ‘classes’ in object-oriented languages; both can service calls to their methods. The term “web service” is used to mean application components whose functionality and interfaces are exposed to users through web technology standards including XML, SOAP and HTTP. The functionality of the ETоN classes is exposed by hosting them on a SOAP server. SOAP defines the XML document structure for sending web service requests and responses, and provides independence from underlying protocols, programming languages and hardware platforms.

ETоN 5 will use SOAP version 1.2.

XML schemas and WSDL (Web Service Description Language) for all transactions will be published on the GovTalk website following initial publication of this specification.

Figure 7.1 illustrates the simple request-response method of remote invocation of ETоN web services using SOAP over HTTP. The term “client” is used here to mean the sending system, and “server” means a system that handles a request to receive (or return) data. All ETоN systems must therefore act as both clients and servers in order to both send and receive data.

Unlike many modern transactional web services which distribute processing to other web service applications (intermediaries), the requirement is for a simple one-to-one interaction; the execution process lies entirely within a service domain and does not rely on any external services. There is no requirement for registration and discovery of ETоN web services (using the complementary UDDI (Universal Description, Discovery and Integration) specification) because of the closed nature of ETоN, i.e. all organisations are pre-authorised by DfT and submit OD data to the NSG Custodian.

It is anticipated that ETоN web services will be provided indirectly to ‘small’ users such as s50 licensees via web access in future as shown in Figure 7.1. In this example, the user would access a central website using a standard web browser, and the website would then invoke remote ETоN web services hosted on the relevant street authority’s server. In practice, each authority could provide such a facility. The requirements for any such system will be specified in future revisions of the ETоN technical specification.

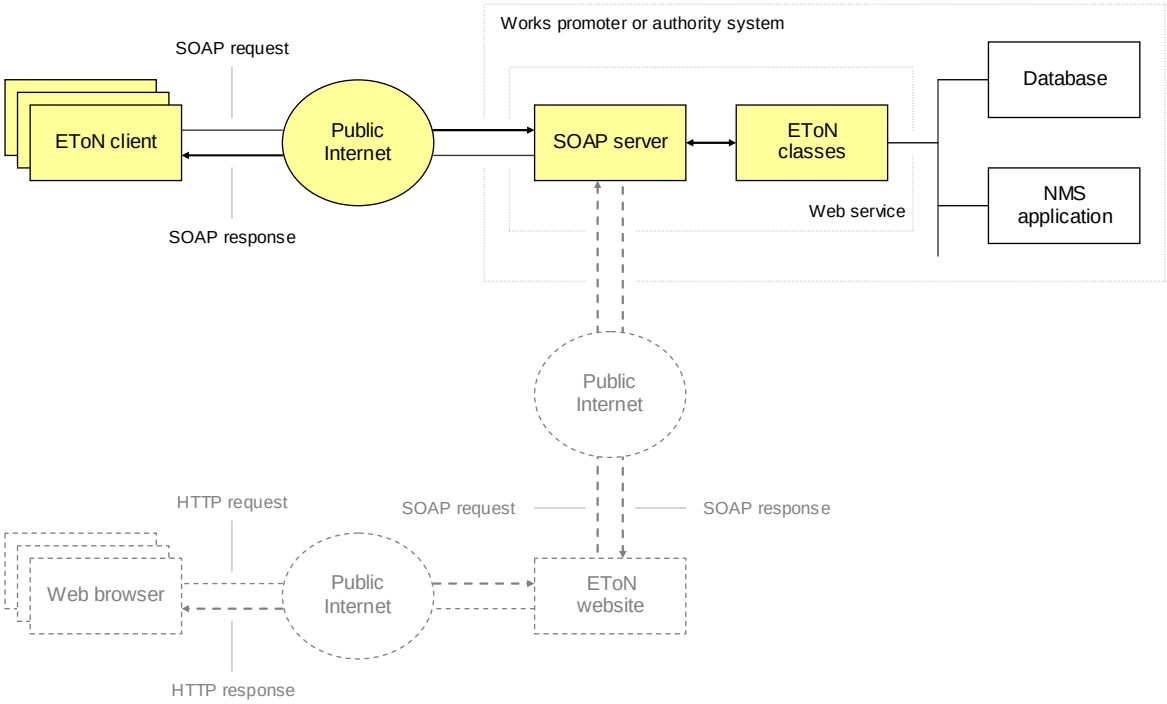


Figure 7.1 Access to EToN 5 web services

7.2SOAP processing

The WSDL associated with this specification defines a SOAP operation for each of the EToN transaction types described in section 5.2. The input message for each operation is the data structure defined for the transaction. In the majority of cases the output message (response) is null. The exception to this is the EToN Ping transaction, where the input message is null and the output message is the structure defined in section 5.2.24.

Sending and receiving systems should record the date and time of receipt of any NRSWA notification for audit purposes.

The scope of notification data validation in EToN 5 is limited to XML schema validation only. Any such problems should not arise in EToN-compliant systems and would obviously need to be resolved during testing and commissioning.

A successful transaction is indicated by return of the appropriate output SOAP message (generally null). If any error has occurred then a standard SOAP fault response will be returned. This specification does not prescribe the way in which the fault response is populated; however, the SOAP Fault Code should be used by the sending system to determine whether it is appropriate to re-try the transaction. A Fault Code of “Receiver” indicates that a re-try is appropriate, whereas a value of “Sender” indicates that the transaction will never be accepted and a re-try would be pointless.

Note that in some cases it is possible that application-level firewalls will suppress any response to a SOAP message that does not conform to the defined schema. This should not occur if systems are designed properly and so a lack of response should normally be interpreted as an inability to connect to the target Web Services and that it would be appropriate to re-try the transaction.

7.3Web service requirements

Each Web Service must be implemented in accordance with the WSDL associated with this specification. The only difference between the WSDL of a specific Web Service implementation and the WSDL for this specification should be the "location" attribute of the "service/port/address" element (i.e. the URL).

The interface between the SOAP server and other web service components and NMS etc. is a matter for individual systems developers, e.g. whether incoming notification data is saved as a temporary file for access by the application, or the database is updated directly via SQL.

Copy notifications should only be sent once an attempt has been made to deliver the transaction to the primary recipient's receiving system. Failure to delivery a notification to any recipient should not prevent attempted delivery to any remaining recipients. The order of sending copy notifications is not important.

In the case of restrictions and other 'broadcast' messages the order of delivery is not important.

7.4Web services security

The presence of a hostile opponent who can observe all the network traffic and is able to send fraudulent messages meeting the protocol requirements must always be assumed. All attacks are some kind of modification to a SOAP message, either deleting some parts and adding afterwards, or adding some completely new element in the header portion or body.

There are a number of elements of web services security; these and corresponding EToN requirements are summarised in Table 7.1.

Table 7.1 Web services security requirements

Element	Description	EToN requirement
Authentication	Ensures that the sender and receiver are who they claim to be. Mechanisms such as username/passwords and public key infrastructure (PKI) can be used to assure authentication.	Not important. An attacker would have nothing to gain by impersonating a genuine user.
Authorisation or access control	Ensures that an authenticated user can access only those services that they are allowed to access. Access control lists are used to implement this.	Not necessary. All users have the same status; there are no user roles and no need to distinguish between sensitive and non-sensitive web services.
Confidentiality	Assures that information in transit and stored information are accessible only by authorised parties. Encryption is	Not important. EToN data content is non-sensitive (e.g. compared to financial transactions). Most data is published in publicly accessible street works

Element	Description	EToN requirement
	used to assure message confidentiality	registers and other public websites.
Integrity	Ensures that information, either in storage or in transit, cannot be modified intentionally or unintentionally. Digital signatures are used to assure message integrity.	Important but not critical because of nature of EToN. Data validation is performed by the applications. Schema validation will ensure that a malformed message could not cause the web service to execute in an unintended mode.
Non-repudiation	Requires that neither the sender nor receiver of a message can legitimately claim that they did not send/receive the message	Confirmation of delivery of notifications to the intended recipient is important.

EToN 5 requires basic security but not a comprehensive solution appropriate for some transactional web services. EToN is a closed system where all users are pre-determined and there are no intermediaries, and no need for partner applications to share user authentication, authorisation and access information. The aim is to provide adequate security consistent with the non-critical, non-confidential nature of EToN.

Receiving systems must therefore not block any incoming transaction that conforms to the requirements of this specification. Examples of techniques that should **not** be used include:

- IP Address Recognition
- HTTP Authentication
- Additional SOAP functionality (e.g. WS-Security) not defined in this specification and associated WSDL.

7.5Firewall requirements

Firewalls and proxy servers should be configured to allow interoperable web services as specified above, i.e. allow unsolicited SOAP messages over HTTP / HTTPS. The method(s) of achieving this whilst protecting internal corporate systems and data is a matter for individual organisations.

Figure 7.2 shows an example of web service behind a demilitarized zone (DMZ). However, it is assumed that not all IT infrastructures will use a DMZ with servers outside of the firewall.

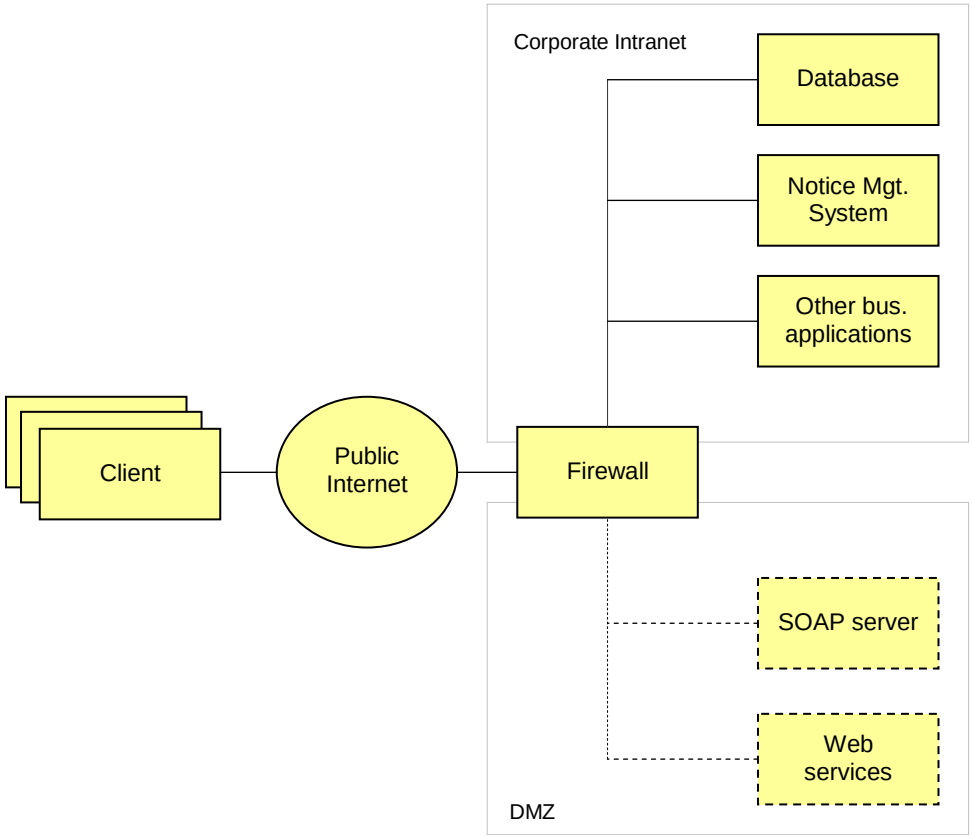


Figure 7.2 Web service provider within a demilitarized zone

The suggested approach is to make firewalls XML and SOAP aware, allowing the firewall to inspect SOAP messages and recognise a valid EToN request before it reaches the SOAP server. To be effective the content should be filtered to determine if the SOAP message and its request are valid, and if the SOAP message contains valid data.

7.6Performance requirements

Given the requirement to exchange individual notifications in real time, it will be important that web servers are able to meet response time requirements during peak traffic loads. This will be particularly important for some large undertakers with centralised street works noticing facilities, and for many authority systems receiving large numbers of notifications from many different undertakers.

The overall response time for any EToN 5 transaction should not exceed 1 second. This is defined as the elapsed time between arrival of a SOAP request message at the server port, and sending of the SOAP response. It does not include transit time across the Internet (e.g. in the event of congestion or ISP problems etc.) and it is assumed that underlying operating system TCP/IP communications etc. processing delays are negligible.

7.7Handling system unavailability

This section should be read in conjunction with Regulation 6 and 7 of *the Street Works (Registers, Notices, Directions and Designations) (England) Regulations 2007 No. 1951*.

In the event of a failure to communicate with a remote EToN web server (e.g. 503 Service Unavailable HTTP status code), the sending system should perform a number of automatic re-tries. If the problem persists, the required action will then depend on specific circumstances, e.g. a delay in delivering a notification of starting date may not matter if it is being given with more than the minimum notice period. Similarly, a delay in delivery to a copy recipient may not matter.

There are currently no specified availability requirements for EToN systems. However, system providers and users should comply with the following requirements. The Code of Practice covers the use of 'paper' notifications in situations where a sending or receiving system has failed.

The key requirement is to ensure that distributed NMS databases are correctly re-synchronised following any disruption to normal operation, e.g. because of local NMS or associated IT infrastructure failure, power supply failure, ISP or network problems etc. This should be achieved automatically by receiving EToN transactions retrospectively, i.e. users should not manually enter notification data received via paper notifications.

In the event of local NMS failure, i.e. unable to create EToN notifications, paper notifications should be created (e.g. a paper form filled in by hand) and sent via fax, e-mail or post etc. Separate records must be maintained. When NMS operation is restored, EToN notifications should be retrospectively created and sent to all recipients in the correct chronological order. This 'catch up' process may also involve receiving related notifications from other systems. Receiving systems must therefore have provision for retrospectively updating works records and/or creating new records.

In the event of technical problems occurring which prevent delivery of a notification (but local NMS is still available), then notifications should be sent in 'paper' form (e.g. by direct fax output from the NMS or by faxing printed output from the NMS) and queued for delivery via EToN as soon as communications with the remote server are re-established. Developers should provide their own retry mechanisms for determining when normal operation of other systems has been restored. This may take account of the OutOfHoursArrangements flag (see section 4.7.15) used by street authorities to identify 24/7 operation.

This recovery process may require normal validation rules and alerts etc. to be overridden and any resultant problems will have to be resolved by manual intervention.

All systems should be re-synchronised within 1 hour of normal service being resumed.

7.8Time reference

All dates and times in EToN transactions must be "local time", i.e. Greenwich Mean Time (GMT) with changes for UK daylight saving time.

All clocks must be synchronised to GMT/BST (e.g. using Network Time Protocol servers) to within 300 seconds at all times.

Timing validation checks within NMS should allow for this tolerance, e.g. the VersionCreatedDatim value in an incoming notification could legitimately be up to 600 seconds (i.e. 10 minutes) later than the current time in the receiving system.

8.NOTIFICATION TIMING AND SEQUENCING RULES

8.1Introduction

This section specifies notification timing and sequence rules. It should be read in conjunction with the works state definitions and rules in section 3.13. The section is intended to cover both “notice” and “permit” regimes, for which the timings and sequencing rules are very similar, even though the names of the corresponding notifications and transactions are different.

The section has been written using the relevant terminology for notices and references to NRSWA Section numbers. Where the relevant section numbers of NRSWA have been disapplied, and replaced by corresponding permit regulations, the same rules and timings apply to the corresponding permit regime, except where otherwise stated. In order to interpret the section for permits, therefore, it is necessary to infer that the noticing terminology is replaced with the corresponding permits terminology, for example:

- Initial notices should be interpreted as permit applications.
- Section 54 Advance Notice should be interpreted as Provisional Advance Authorisation.
- Section 55 Notice should be interpreted as permit application.
- Section 57 Immediate Notices should be interpreted as application for a permit within 2 hour of Start of Works.
- Responses to notices should be interpreted as permits or permit refusals
- Requests for duration extensions should be interpreted as applications for a permit variation.

Where there are differences in the timing and sequencing rules, these are noted as exceptions for the permit regimes.

The rules in this section should not affect the interoperability between systems, i.e. violation of the rules should not result in the rejection of an EToN transaction. However, these rules may be used to determine if an FPN is applicable. Notice management systems should, as far as possible, ensure that notifications are sent at the correct time and in the correct sequence. It is for individual developers to decide on appropriate related functionality for providing automatic alerts and reminders, and the extent of automatic interlocks.

Where highway authorities submit initial notifications via EToN, they will be expected to do so within the same timescales as undertakers. Notice management systems for use by highway authorities should therefore include appropriate functionality for generating alerts and reminders etc. as provided for statutory undertakers.

8.2 Basic timing rules

A number of basic timing rules apply to all notifications, i.e. sent by promoters and street authorities:

1. Unless stated otherwise reference to “day” means working day, commonly accepted as 08:00 to 16:30 hours (shown as black bars in the timeline diagrams below). Calculation of dates in relation to notice periods should therefore exclude weekends and public and bank holidays, e.g. a 10-day notice may need to be given 15 calendar days before the proposed start date because of intervening weekends and a bank holiday.

2. Reference to “month” means calendar month, e.g. if a s54 advance notice is received on 6 June 2006, then the earliest start date is 6 September 2006. However, if the future date is a Saturday or Sunday or a public holiday then the earliest start date (or the last date for a street authority response) becomes the next working day. The actual number of elapsed days will therefore vary throughout the year.

3. Timing of notification events starts when the notification is received by the recipient’s server. Delays in delivery may occur due to system or network problems (see section 7).

4. Any notification, other than an Immediate Works notification, received after 16:30 on any working day (or at any time on a non-working day) is deemed to have been given on the next working day. The actual time and date of receipt should be recorded but calculations of notice and response periods should use the next working day as the effective start date.

5. The proposed start and end dates given in notifications can be working or non-working days. Promoters should specify the actual dates on which they intend to start and end the works in order to assist co-ordination. Authorities may or may not allow works to be carried out on non-working days (and outside normal working hours) depending on local circumstances.

6. Where street authorities resend notifications to replace previous invalid notifications (e.g. because a direction contained erroneous data), then this correction must be done within the notice or response period of the initial notification. This time restriction does not apply to varying or revocation of valid directions where legally permitted (see Table 3.2).

Specific rules in relation to notification, validity and response periods are described below. These basic rules are illustrated in the following examples for clarity.

8.3 Notification, validity and response periods

The key notification, validity and response periods in relation to initial and confirmation notifications are summarised in the following table (NRSWA section numbers are used for convenience). The time periods shown are in days except for s54 notice and response periods which are in calendar months, and Immediate works where notifications should be given within 2 hours of works commencing (or any time before).

Table 8.1 Summary of notification and response periods

Works cat.	Minimum notice period			Validity period		Response period			
	S54	S55	S57	S54	S55	S54	S55	S57	S74
Major	3m	10d		15d	5d	1m	5d		5d
Standard		10d			5d		5d		5d
Minor		3d			2d		2d		2d
Urgent		-2h					*		2d
Emergency			-2h					*	2d

*Directions may be given at any time whilst the works are in progress

Table 8.2 Summary of permit applications and response periods

Works cat.	Minimum notice period		Validity period		Response period		
	PAA	Application	PAA	Application*	PAA	Application	S74
Major	3m	10d	15d	5d	1m	5d	5d
Standard		10d		5d		5d	5d
Minor		3d		2d		2d	2d
Immediate		-2h				2d	2d

*Note that the validity periods only apply to permits in Category 3 and 4 Non Traffic Sensitive streets; Otherwise the permits start and end dates cannot be varied.

Some street authorities may have in place arrangements for receiving and responding to notifications during non-working hours, i.e. between 16:30 and 08:00 the following day, as indicated by the OutOfHoursArrangements flag in an authority's OD data (see section 4.7.15). In the case of Immediate works which start during non-working hours and where the street authority does have such arrangements in place then the notification must be sent within 2 hours of work starting. Where the street authority does not have such arrangements in place then the notification is valid if received any time before 10:00 on the next working day; the actual start time may therefore be more than 2 hours before the time of receipt.

8.3.1Notice periods

The minimum notice periods in Table 8.1 include the day on which the notification is given (or deemed to have been given) but do not include the proposed start date.

Planned works cannot start before expiry of the prescribed notice period and before the proposed start date unless an early start has been agreed.

The basic rules are illustrated in the following example timeline diagrams for sending a s55 notice and a s54(4A) notice.

Figure 8.1 illustrates the notification timing rules for Minor works. In the first example the notification is given during working hours on Tuesday and therefore the earliest start date is the following Friday unless an early start is agreed with the street authority. In the second example, the notification is given after 16:30 on Tuesday and the earliest start date is now the following Saturday. In the example work actually starts on the following Monday, i.e. after more than 5 days.

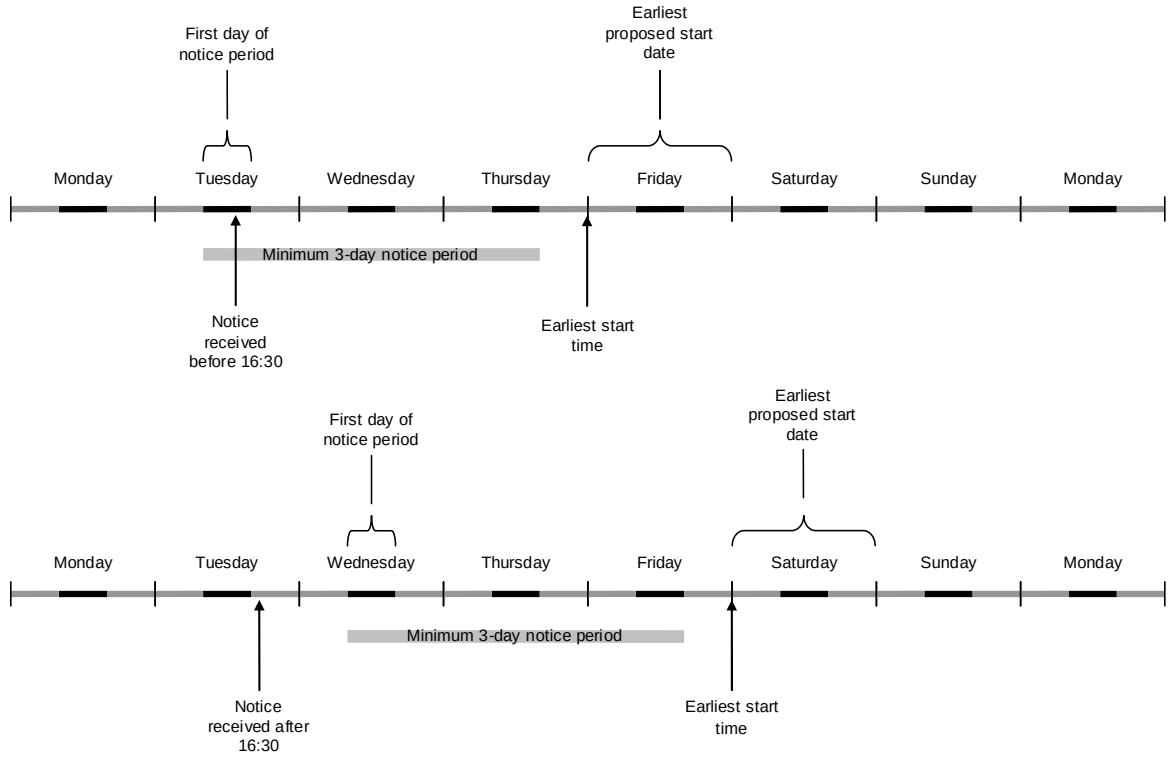


Figure 8.1 Illustration of notice period for a minor works notification

Figure **8.2** illustrates timing for submission of a s54(4A) notice. The notice period as prescribed in the regulations is **2 days** beginning with the proposed start date given in the s54 notice. In the first example the s54(4A) notice should be submitted on Tuesday or before 16:30 on Wednesday. In the second example the proposed start date is on a Friday, giving a window of 4 elapsed days.

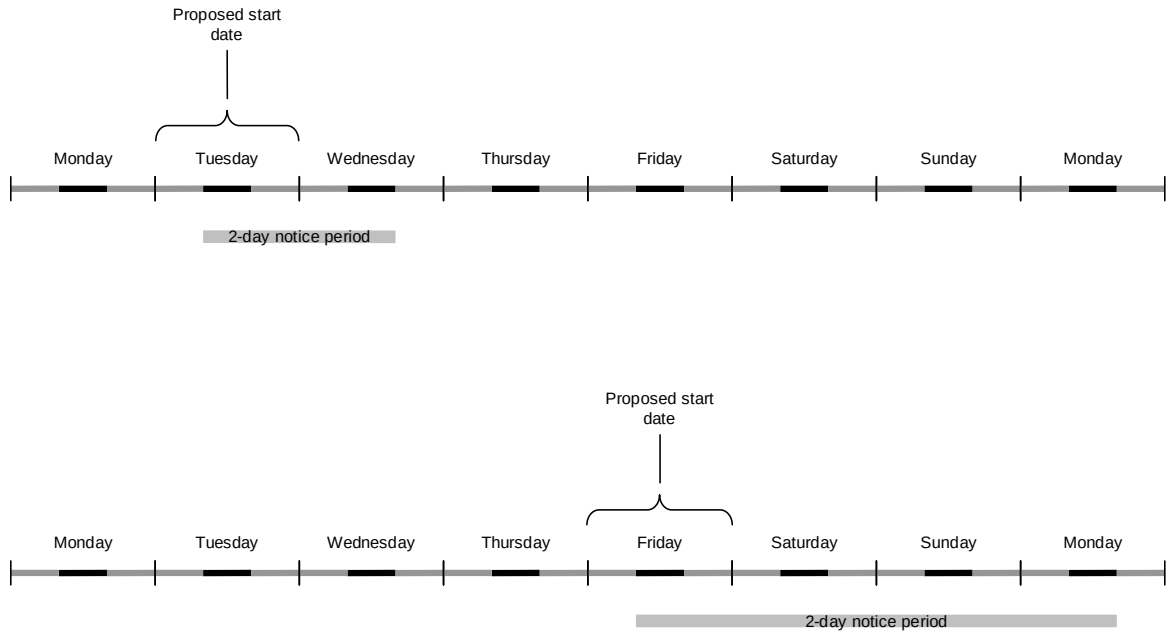


Figure 8.2 Illustration of timing for a s54(4A) notice

Note This does not apply to permit regimes; there is no corresponding timing requirement for cancellations.

Figure 8.3 shows the basic timing requirements in relation to an actual start notice. The notice should be given no later than the end of the next working day after the day on which the works started. This effectively provides a 1-2 day notice period. The same timing also applies to works stop notices.

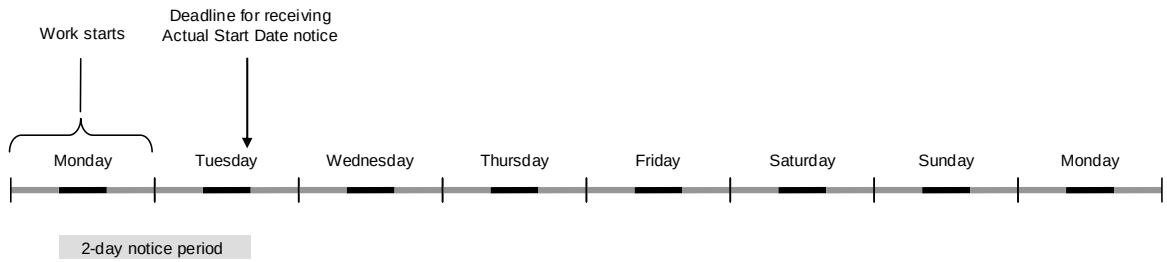


Figure 8.3 Illustration of timing for an actual start notice

8.3.2Notice validity periods

A notice validity period includes the proposed start day as illustrated in Figure 8.4. The notification ceases to have effect when the validity period expires. A validity period starts at 00:00 and ends at 23:59 on working days.

Planned works must start before expiry of the prescribed s55 validity period unless an extension (i.e. a late start) has been agreed.

Validity period is illustrated in Figure 8.4. The first example shows a 2-day validity period (Minor works) on consecutive working days. The second example shows a 5-day validity period (Major and Standard works) with an intervening weekend.

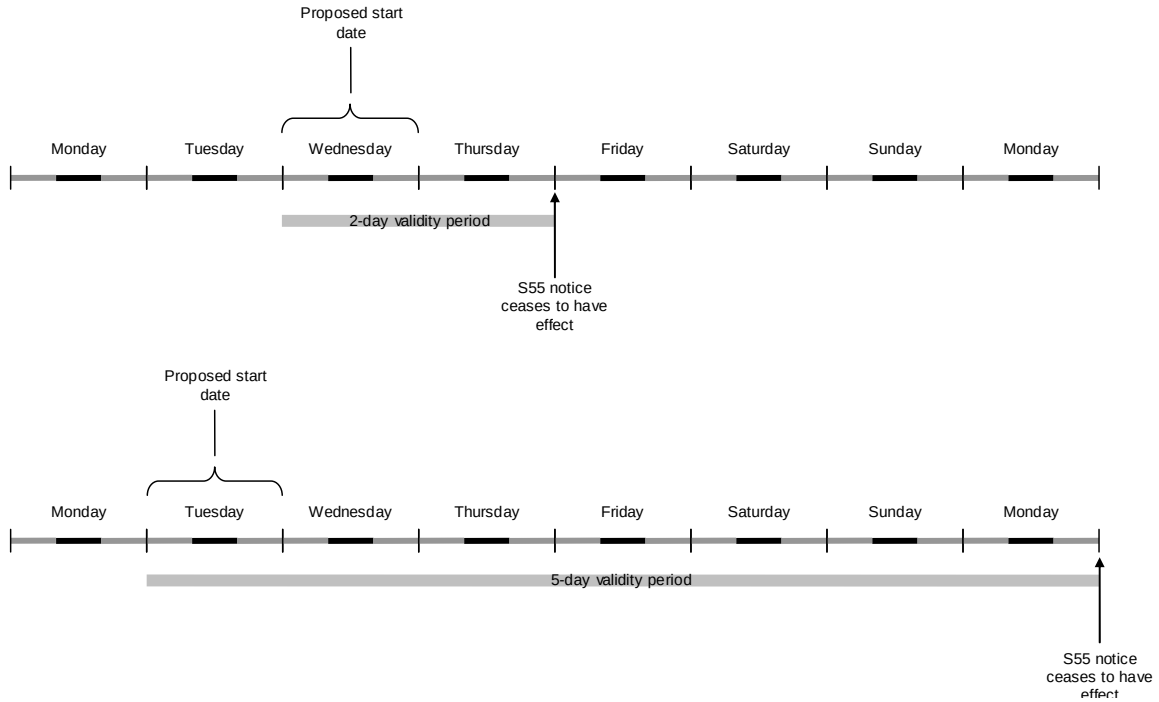


Figure 8.4 Illustration of validity period for a s55 notice

Notice Regimes Only - Note that in the case of Major works, the preceding **s54 notice must still be valid**, i.e. work must also start before expiry of the prescribed s54 validity period unless an extension has been agreed

Permit Regimes Only – For Non Traffic Sensitive streets of Category 3 and 4, the start date for the permit duration may be slipped as shown above; for other streets, no slippage is allowed, a the duration of the permit must apply from the proposed start date.

8.3.3Response periods

This refers to responses by authorities:

- Giving s56(1) and s56A directions in response to s54, s55 and s57 notices from undertakers, or the issue of permits/permit refusals in response to an application.

- Duration challenge in response to in-progress revised duration estimate notices from undertakers.

The response period does not include the day on which the notification was given.

The response periods do not apply to responses given to co-ordinate works prior to the introduction of a s58 restriction. Advanced notification is not required for notifying Major works in response to a proposed restriction notice.

Figure 8.5 illustrates a 2-day (Minor works) response period for giving directions or challenging a duration estimate. Any direction or duration challenge should be received by the undertaker's notice management system by 16:30.

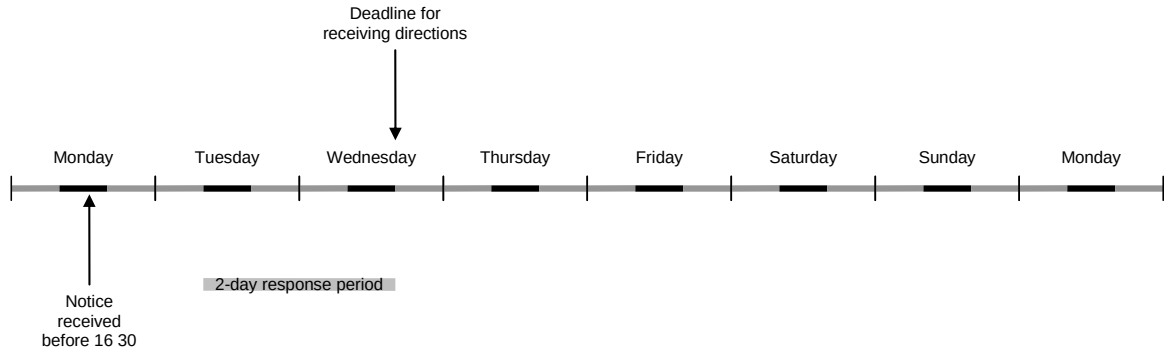


Figure 8.5 Illustration of response period for Minor works

8.4Calculation of s74 overrun period

This section defines the rules for calculating s74 overstay period. The actual charge should be calculated according to road and works category using the daily rates that will be defined in the Street Works (Charges for Unreasonably Prolonged Occupation of the Highway) (England) Regulations 2007.

The following requirements apply to systems for use by both authorities and works promoters. However, s74 charges apply to undertakers only.

8.4.1General

Table 8.3 identifies the relevant notifications as defined in sections 4 and 5. The notification "content" column contains the names of the data elements that are used in the calculation of s74 overrun charges.

Table 8.3 Date elements used in calculation of overrun period

Notification group	Content
New Activity (Non-immediate works)	ProposedStartDate
	EstimatedEndDate
Activity Confirmation	ProposedStartDate
	EstimatedEndDate
New Activity (Immediate works)	ActualStartDate
	EstimatedEndDate
Actual Start Date	ActualStartDate
Revised Duration Estimate	EstimatedEndDate
Duration challenge	AuthorityDurationEstimate
Works Stop	ActualEndDate

Note that EToN XML schemas are used for data transport only. Notification management systems should store the values of all elements where used in successive notifications (e.g. Estimated end date 1, Estimated end date 2 etc.), i.e. no data must be overwritten.

8.4.2Calculation of Reasonable Period

The Reasonable Period is the agreed number of whole, consecutive working days allowed for completing a particular works phase.

The Reasonable Period is the total number of working days from the start date (D_s) to the end date (D_e) inclusive, where:

D_s = ProposedStartDate value (notice or permit) or ActualStartDate (for Immediate works), or the next working day if a non-working day

D_e = EstimatedEndDate value (notice or permit) or the previous working day if a non-working day

Reasonable Period is illustrated in Figure 8.6 for a Standard works with an estimated duration of 4 working days. In the first example the estimated start date is on a Tuesday and the estimated end date is on the following Saturday (e.g. Immediate works). The overall duration is 5 days including 1 non-working day, and therefore the Reasonable Period is 4 days. In the second example the same works is planned to start on a Wednesday and finish on the following Monday. In this case the overall duration is 6 days including 2 non-working days, and the Reasonable Period is still 4 days.

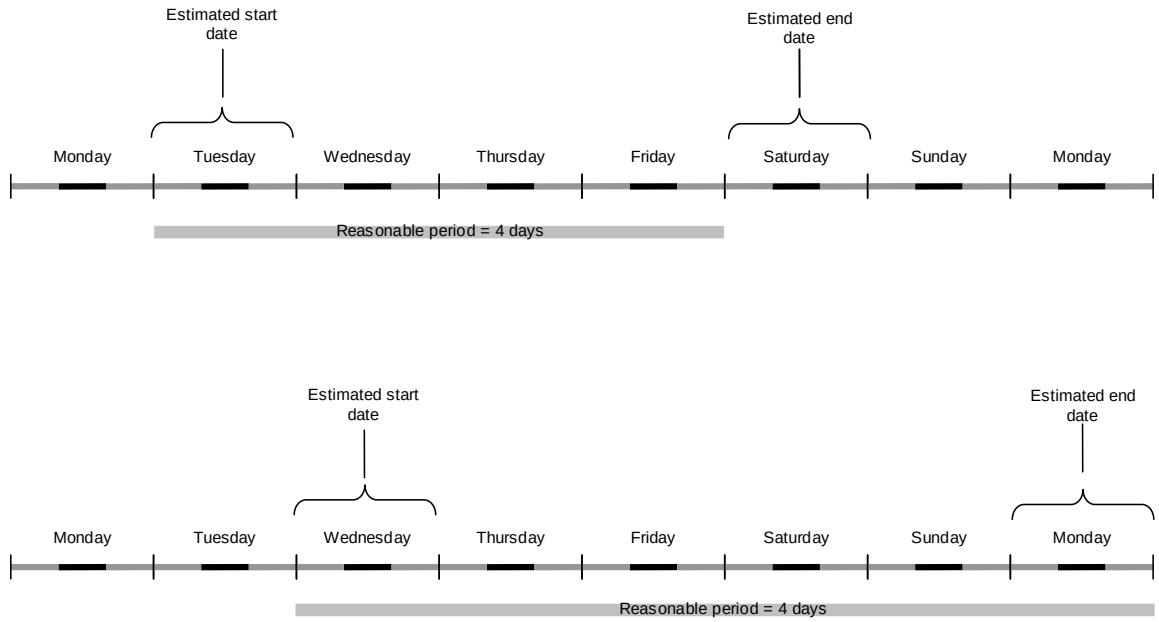


Figure 8.6 Illustration of Reasonable Period

In a Duration Estimate Challenge notice the AuthorityDurationEstimate value is the street authority's proposed Reasonable Period in working days.

8.4.3Revision of Reasonable Period

In the case of NRSWA notices, the initial value of RP is derived from the proposed start and estimated end dates provided in a s55 notice, or the actual start date and estimated end date provided in a s57 notice. The initial value may be superseded by one or more revised values if the undertaker submits a revised duration estimate notice and/or if the street authority challenges the undertaker's duration estimate (in response to a s55, s57 or revised duration estimate notice). A street authority may also provide a revised duration in a s56 direction, if appropriate.

For permits, the initial value of RP is derived from the proposed Start and End dates for which a permit was issued, and may only superseded by a granted variation. Note that it is possible, although unusual, to have a RP for S74 purposes which is less that the full period for which a permit has been issued where a duration challenge has been issued subsequent to the permit response.

Revision of reasonable period is illustrated in the following examples for Major works.

NRSWA notice	Reasonable Period	Comments
Initial Notice	RP1	
Confirmation Notice	RP2	If different from RP1
Actual Start Date	RP3	If different from RP2
Revised Duration Estimate	RP4	
Duration Estimate Challenge	RP5	Only if the SA responds within the prescribed response time
Duration Estimate Challenge Non-Acceptance		May go to arbitration
Revised Duration Estimate	RP6	If different from RP5, once resolved

The street authority should not normally challenge an estimated duration in a Confirmation Notice if the same duration was not challenged following the Initial Notice.

8.4.4Calculation of actual duration

The actual duration of a works phase is derived from the actual start date contained in the s57 notice or s74 actual start notice, and the actual end date contained in the s74 Works Stop notice. If the actual start date is a non-working day then the next working day is used as the start date for s74 purposes. Similarly, if the actual end date is a non-working day then the previous working day is used as the end date. The actual duration is the number of whole working days from the start date to the end date, inclusive. Part of a working day counts as a whole day.

In the following example the Reasonable Period is 4 days; work starts at 18.00 hours on Tuesday and finishes at 12.00 on the following Monday (5.75 elapsed days, 3.5 working days). The actual duration for s74 purposes is 5 working days (times are not provided in Actual Start Date and Works Stop notices, and periods are reckoned in whole working days).

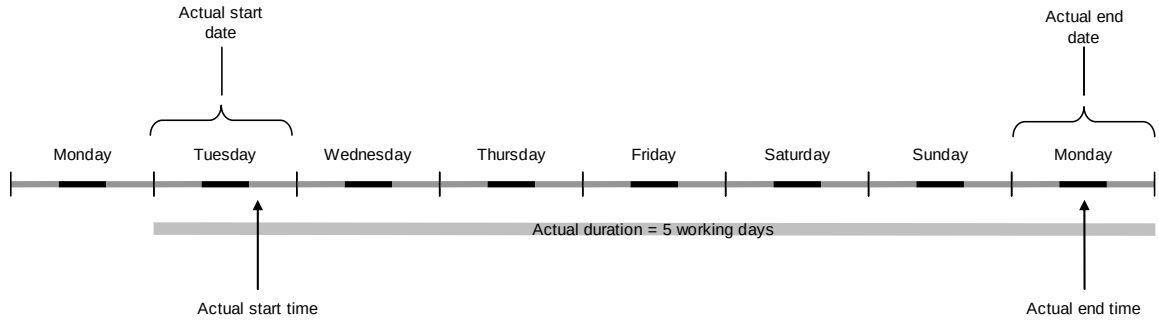


Figure 8.7 Illustration of actual duration

8.4.5Calculation of overrun period

The chargeable overrun period is given by $P_o = P_a - P_r$ in whole working days, where:

P_o = Overrun period

P_a = Actual works duration

P_r = Reasonable Period

Overrun charges only apply where $P_a > P_r$ or the Prescribed Period (as defined in regulations), whichever is the greater.

Overrun charges will be incurred if the works are not recorded as being clear/closed on the last working day of the Reasonable Period. Any overrun on any working day will incur a charge at the applicable full daily rate, i.e. charges are not calculated on a pro-rata basis. From the above examples, $P_a = 5$, $P_r = 4$ and the overrun period is therefore 1 day.

8.5Summary of notification timing rules

The following is a summary of noticing timing and sequencing rules grouped by NRSWA section numbers for ease of reference. The main rules are documented in timeline diagrams/tables.

Table 8.4 Summary of notification timing and sequencing rules

NRSWA section	Notification type	Timing and sequence-related rules
	Forward planning information	1. Forward planning information can be submitted at any time prior to the statutory s54 advance notice or PAA, e.g. a year or more in advance. The information can be updated as necessary during this period. Forward planning information cannot be submitted or updated after a s54 advance notice has been given.
	Voluntary cancellation	2. A works/phase can be voluntarily cancelled at any stage prior to work actually starting.
	Works Data Alteration	3. A Works Data Alteration notification should be submitted by the end of the next working day following the agreement of the correction.
S50	Notice of intention to issue a street works licence	4. Before issuing a street works licence, a street authority should give at least 10 days' notice to undertakers and others likely to be affected.
S54(1)	Advance notification Corresponding PAA	5. An advance notification is not required for Major remedial works or permanent reinstatement of interim works. 6. An advance notification is not required for Major works notified in response to a s58 or s58A restriction notice. 7. The s54(1) notice ceases to have effect if the works have not substantially begun before the end of the validity period.

NRSWA section	Notification type	Timing and sequence-related rules
S54(4A)	Confirmation of non-issue of s55(1) notice Not applicable to Permits	8. An advance notification will cease to have effect in relation to the proposed works if those works are not substantially begun before the end the prescribed validity period (or such further period as the street authority may allow). 9. If for any reason a s55(1) notice has not been given by the proposed start date provided in the s54(1) notice then a s54(4A) notice should be submitted by the end of the next working day. This notice must be sent (i.e. there must be an EToN transaction) even if a voluntary cancellation notice has been sent previously. 10. If the undertaker intends to proceed with the works within the validity period of the Initial (s54) Notice then a Confirmation Notice (s55) must be sent by the end of the next working day after the estimated start date in the Initial Notice to meet the requirements for a s54(4A) notice. A late notice may attract an FPN.
S55	Notice of starting date (planned works) Corresponding Permit Application	11. A s55 notice should be submitted for a Major works for which a s54 notice has previously been given. 12. If Major works have not started by the end of the validity period of the s54 notice then a new s54 notice (and subsequent s55 notice) is required. 13. Where a s55 notice relates to work that will be completed in phases, the estimated end date refers to the end of that particular phase. A new s55 notice will be required to start the next phase. 14. Works cannot start before expiry of the s55 notice period except where an early start has been agreed. 15. A s55 notice ceases to have effect if works are not substantially begun before the end of the validity period beginning with the starting date specified in the notice. A new s55 notice is then required 16. A s55 notice cannot be sent if SED approval (schedule 4) is required and has not been given. 17. If, after sending a s54(1) or subsequent s55(1) notice (i.e. any time before the proposed start date for a s54 (1) notice, and before the expiry of the validity period for a s55(1) notice) an undertaker decides not to proceed with the works then a cancellation notice should be given to cancel the s54(1) or s55(1) notice. 18. The proposed start date in a s55 notice for customer connections and safety-related works should take account of the 20-day restriction following s58 and s58(A) restrictions coming into force, i.e. works are not allowed during the 20-day period starting with the day on which the restriction comes into force.
S55	Notice of Urgent works	19. A notice should be given within 2 hours of starting work. If the work is started after 16:30 on a working day and the street authority is not able to receive and respond to notices during non-working hours then the notice should be given by 10:00 on the next working day.
S55(8)	Confirmation of lapsed s55(1) notice Not applicable to permits	20. If for any reason work has not started by the end of the validity period of a s55(1) notice then a s55(8) notice should be submitted by the end of the next working day after the expiry of the s55(1) notice. This notice must be sent (i.e. there must be an EToN transaction) even if a voluntary cancellation notice has been sent previously.

NRSWA section	Notification type	Timing and sequence-related rules
S56(1)	Direction on timing Corresponding Permit Refusal/ Conditions/	21. A direction for Major works can be given either in response to the s54 advance notice (within 1 month) or following the s55 notice of starting date (within 5 days) but only if there has been a significant change in circumstances. 22. For Standard and Minor works a direction can be given within 5 or 2 days respectively of receipt of the s55 notice of starting date). 23. A direction may be given at any time to control the order and timing of street works prior to a s58 restriction.
S56(1A)	Direction subsisting works	24. A direction can only be given in relation to works that are in progress.
S56A	Direction on location Corresponding Permit Refusal/ Conditions	25. A direction for Major works can only be given in response to the s54 advance notice (within 1 month). 26. A direction for Standard and Minor works can be given following the s55 notice of starting date (within 5 or 2 days respectively). 27. Subsequent directions may be given at any time to vary or revoke the original direction.
S57	Notice of Emergency works Corresponding Application for Permit	28. A notification should be given within 2 hours of starting work. If the work is started after 16:30 on a working day and the street authority is not able to receive and respond to notifications during non-working hours then the notification should be given by 10:00 on the next working day.
S58	Notice of proposed restriction	29. The street authority should give at least 3 months notice (in advance of the proposed start date of the works) of a proposed restriction. 30. Undertakers should then respond within 20 days. 31. If the substantial road works have not started within 6 months of the proposed date or within 6 months of any undertaker completing street works (as a result of the s58 notice) then the s58 notice ceases to be valid.
S58	Notice of completion of substantial road works	32. Once the substantial road works are completed the street authority should give a non-statutory notice confirming that the restriction is in force. 33. An embargo on carrying out those works for customer connections shall apply for 20 working days immediately following the completion of the substantial road works. 34. Where the street authority's consent is required for an undertaker to carry out works during a s58 restriction, the authority should respond to an application within 20 days.
S58A	Notice of proposed restriction	35. The street authority should give at least 20 days notice (in advance of the proposed start date of the works) of a proposed restriction 36. Undertakers should respond by the date specified in the proposed restriction notice (or the next working day if the specified date is a non-working day). 37. A further notice(s) may be sent with a revised start date and/or extension of the response date. The response date can be any date after the response date given in the initial notice.

NRSWA section	Notification type	Timing and sequence-related rules
S58A	Direction on starting date Corresponding Permit Refusal/ Conditions	38. Immediately following the undertaker response period the street authority may start to give directions stating when each of those works may begin.
S58A	Direction restricting further works	39. A direction restricting further works may be given after expiry of the notice period (specified in the notice of proposed restriction) and before the last works has been completed. 40. An embargo on carrying out those works for customer connections shall apply for 20 working days immediately following the completion of the substantial street works. 41. Where the street authority's consent is required for an undertaker to carry out works during a s58A restriction, the authority should respond to an application within 20 days.
S66	Notice to mitigate or discontinue a delay or obstruction Corresponding Permit Revocations	42. A notification can only be given in relation to works that are in progress.
S70	Registration of reinstatement	43. A s70 notice of completion of reinstatement should be given within 10 days of completing a reinstatement. 44. Where works that have been notified as requiring excavation subsequently do not involve excavation then a reinstatement registration is not required. 45. Registration notices can be sent both before and after the Works Stop notice (i.e. multiple partial registration notices may be sent).
S72(3)	Remedial works Corresponding Permit Application	46. A notification to carry out reinstatement remedial works can be given at any time from completion of reinstatement to expiry of the guarantee period.

NRSWA section	Notification type	Timing and sequence-related rules
S74	Notice of actual start of works, stopping works, and durations challenge	47. A notice of actual start should be given by the end of the working day after the working day on which the works started. 48. The Actual Start date in the s74 actual start date notice cannot be before the earliest start date given in the preceding s55 notice unless an early start has been agreed. 49. If the street authority does not accept the proposed duration in a s55 notice, it should be challenged within the appropriate notice response time (2 or 5 days) by sending its own estimated duration of the works using a duration estimate challenge notice. 50. A street authority can issue a duration challenge in response to a s54 advance notice, s55 notice of starting date, s55 notice of Urgent works, s57 notice of Emergency works, s74 actual start date notice or in-progress revised duration estimate notice. 51. If the undertaker does not accept the authority's estimated duration then it should send a non-statutory duration challenge non-acceptance notice within a further 2 days. The works may still proceed but the authority's estimate will stand as the reasonable period until the matter is resolved. If the matter is resolved before expiry of the reasonable period then the undertaker should send a revised duration estimate notice with the agreed estimated end date (which the authority will then not challenge). If agreement is not reached until after expiry of the reasonable period then the undertaker should submit the information and the street authority should manually amend the information in the register. 52. A Works Stop notice should be given by the end of the working day after the day on which the works were clear/closed.
S95A	Fixed Penalty Notice	53. An FPN may not be given more than 91 days after the commissioning of the offence (i.e. the date of the alleged offence) beginning with the day of its commission.

Figure 8.8 provides an overview of the relationships between the various notice types for a single phase works life cycle. The diagram should be read in conjunction with section 3.13 (State definition).

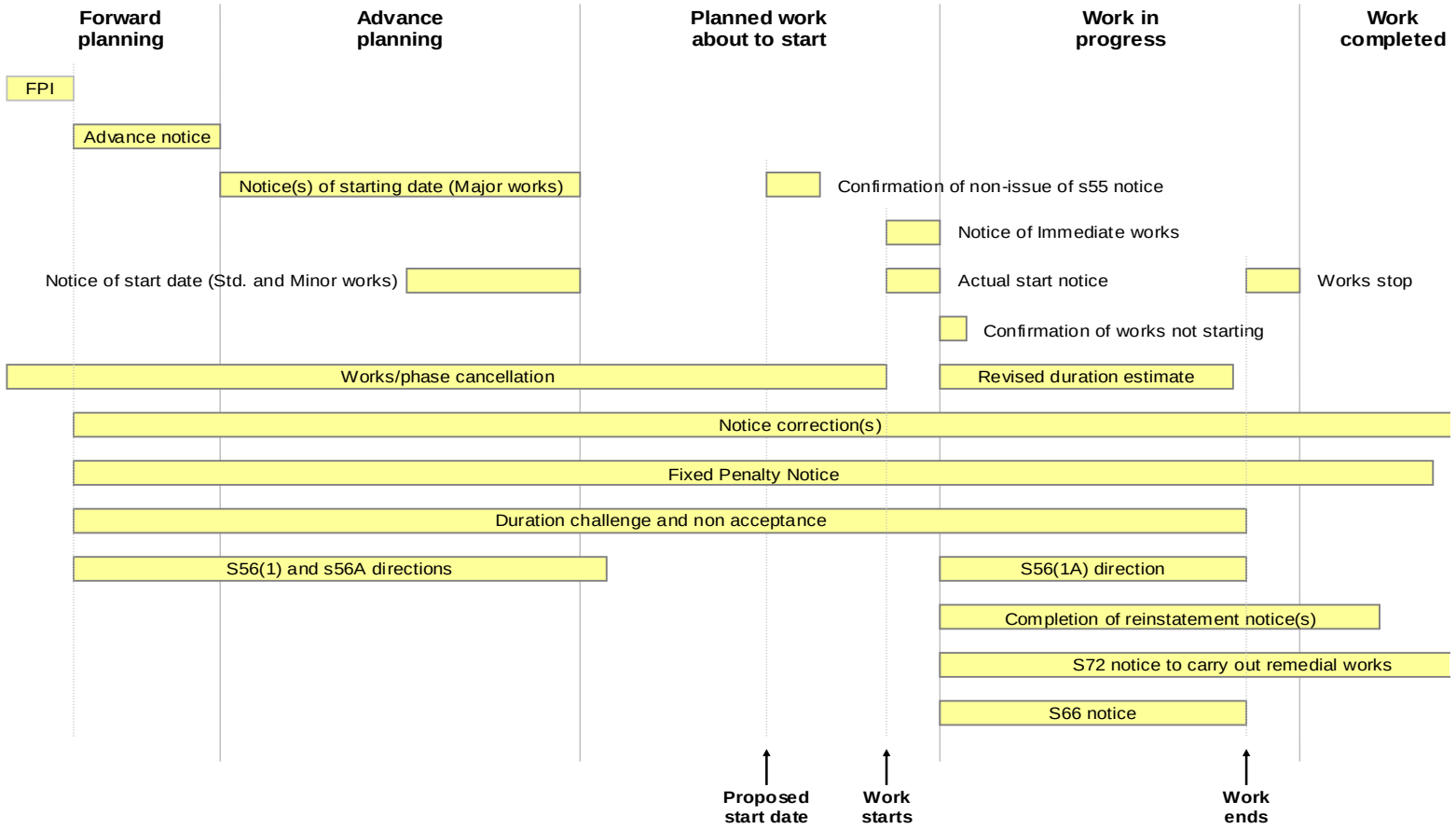


Figure 8.8 Works notification sequence overview

8.6Example noticing scenarios

Timing and sequencing requirements are illustrated below using a combination of timing diagrams and associated descriptions in tabular form. The example timelines are not intended to cover all possible combinations of events.

The tables include entries for each 'event' shown on the timing diagram, including the derivation of the event time (calculated or as provided in a notification), and any associated validation rules. The rules should be used within the sending and receiving NMS to determine the validity of each notification and the allowable resulting actions. Other validation rules may be used to generate reminders and alerts to support the process

Note that the timelines are not drawn to scale and are not meant to accurately represent the time intervals between the different noticing events, which can vary between hours and months. As far as possible the events are shown and listed in chronological order but the actual sequence may be different in practice. The grey bars indicate time windows within which related events can occur.

The timelines should be read and interpreted in conjunction with the basic timing rules and detailed timelines above.

The following scenarios are described:

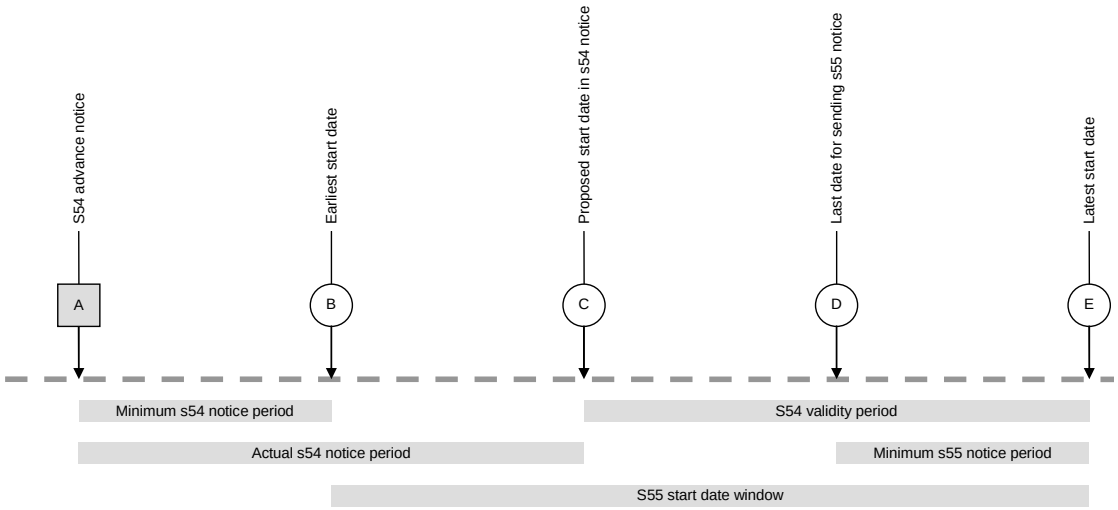
NRSWA section	Notification type/scenario
s54(1)	Window for sending notice of starting date – Major works Corresponding window for Application following Provisional Advance Authorisation
s54(4A)	Failure to send a s55(1) notice by the proposed start date given in a s54(1) notice No Permits equivalent, although cancellation may be used at any time.
s55(1)	Notice of starting date – Standard works Corresponding Permit Application
s55(1)	Notice of starting date – Minor works Corresponding Permit Application
s55(8)	Confirmation of works not starting by the end of the validity period of a s55(1) notice No Permits equivalent, although cancellation may be used at any time.
s55/s57	Notice of Immediate works Corresponding Application for Permit
s74	Street works from proposed to works clear
s74	Street works from interim reinstatement complete to works closed
s74	Street works for remedial reinstatement (non-Immediate)
s74	Street works for remedial reinstatement (dangerous)
s74	Challenge to duration estimate
s58	Restriction following substantial road works – no undertakers' works
s58	Restriction following substantial road works – with undertakers' works
s58A	Restriction following substantial street works

Notification events are identified using letters within squares. Related events or reference points are identified using letters within circles.

Note that "day received" in the Derivation column means the date of the working day when the notification was received, i.e. before 16:30 hours on Monday to Friday.

S54(1) - window for sending s55(1) notice for Major Works

Corresponding window for Permit Application following Provisional Advance Authorisation

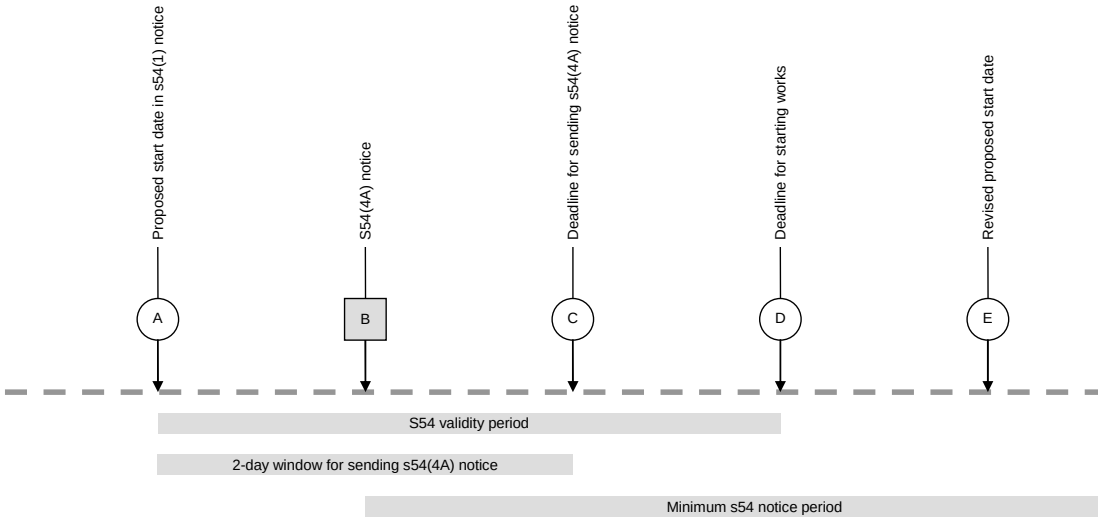


This example assumes that there are no agreed early starts or extensions to the s54 validity period. The s54 advance notice is sent with more than the statutory minimum notice period. The earliest proposed start date in the subsequent s55 notice is 3 months after the s54 notice was received, and the latest proposed start date is 15 days after the proposed start date in the s54 notice. The last date for receiving the s55 notice is 10 days before the latest start date and work must start on the latest start date, i.e. no remaining s54 validity period.

Ref.	Description	Derivation	Validation rules	Notes
A	S54 Advance Notice	Day received		
B	Earliest legal start date	B = A + 3 months		Statutory minimum 3-month notice period for s54 notice.
C	Proposed starting date	As provided in s54 notice		
D	Last date for sending s55 notice	D = E – 10 days		Statutory minimum 10-day notice period for s55 notice (Major works).
E	Latest legal start date	E = C + 14 days		S54 notice has a 15-day validity period. Work must start before the s54 notice expires.

S54(4A) notice - failure to send a s55(1) notice by the proposed start date given in a s54(1) notice

No Permits Equivalent, although a Cancellation can be used at any time before works has started

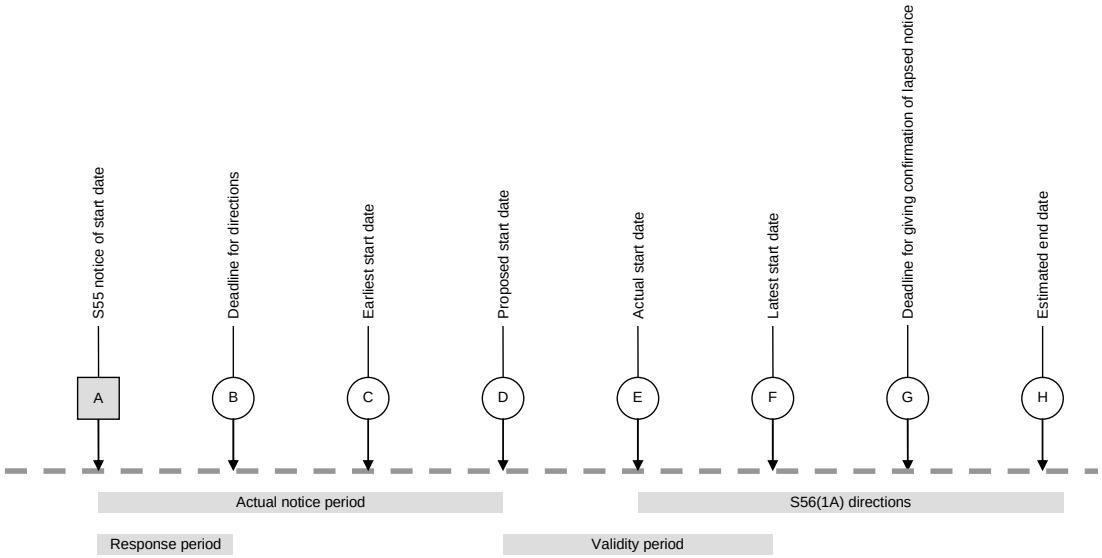


This example assumes that a s55(1) notice has not been sent by the proposed start date given in the 54(1) notice. A s54(4A) notice is sent by the end of the next working day. The work has been programmed for a later date which is before the expiry of the minimum (3 month) notice period required for another s54 notice, and therefore a request for an early start is included.

Ref.	Description	Derivation	Validation rules	Notes
A	Original proposed start date	As provided in s54 notice		
B	S54(4A) notice	Day received	A <= B <= C	2-day window starting with the proposed start date.
C	Deadline for sending s54(4A) notice	C = A + 1		Notice should be received no later than the end of the next working day after the proposed start date given in the s54 (1) notice.
D	Deadline for starting work	D = A + 14 days		Under s54(4B) of NRSWA, the s54 notice ceases to have effect if the works have not begun before the end of the s54 validity period.
E	Revised proposed start date	As provided in s54(4A) notice		Request for an early start required in s54(4A) notice if E – B < 3 months.

S55(1) notice of starting date - Standard works

Corresponding Permit Application



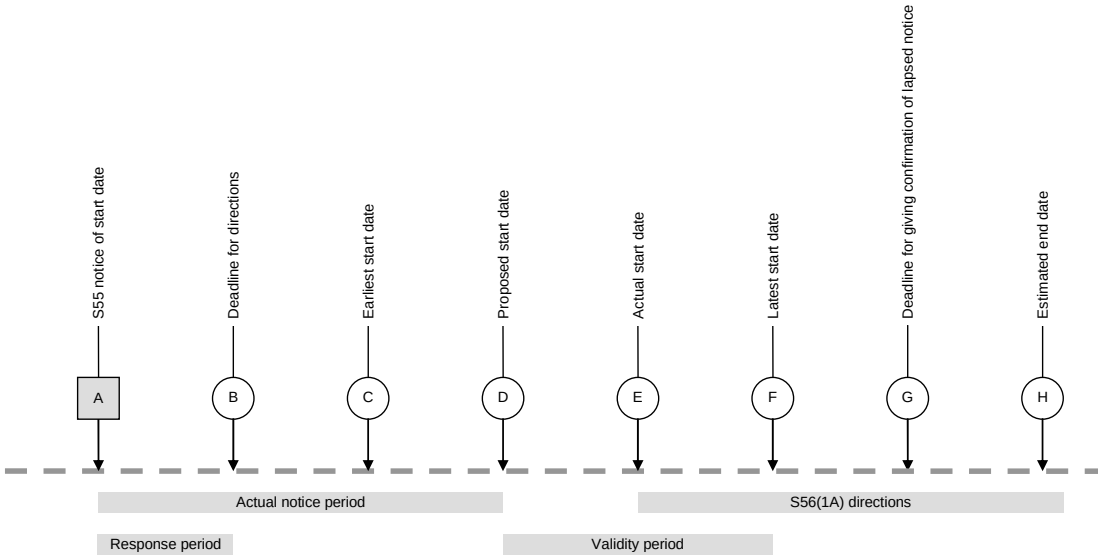
This example assumes that the actual notice period is more than the statutory minimum. The works start after the proposed start date and the estimated end date is revised accordingly (not shown).

Ref.	Description	Derivation	Validation rules	Notes
A	Send S55 Notice of Start Date	Day received		Should provide at least 10 days notice of proposed start date for Standard works.
B	Latest date for street authority to issue direction/permit responses	B = A + 5 days		Statutory maximum 5-day response period.
C	Earliest start date	C = A + 10 days		For permits, Earliest Start date = D
D	Proposed start date	As provided in s55 notice	D >= C	
E	Actual start date	As provided in s74 actual start date notice	D <= E <= F	S56(1A) directions can be given at any time whilst works are in progress.
F	Latest start date	F = D + 4 days		Statutory maximum 5-day validity period (for permits, applies only in Category 3/4 non-TS streets); otherwise F=D
G	Latest date for sending a s55(8) notice – no permit equivalent	G = F + 1 day		No later than the end of the next working day after the expiry of the validity of the s55 (1) notice.
H	Estimated end date	As provided in s55 notice	3 <= (H – D) <= 9	Standard works duration is between 4 and 10 days inclusive.

Section 56(1A) Directions do not apply to permits, although permits may be varied by the Street Authority.

S55(1) notice of starting date - Minor works

Corresponding Permit Application



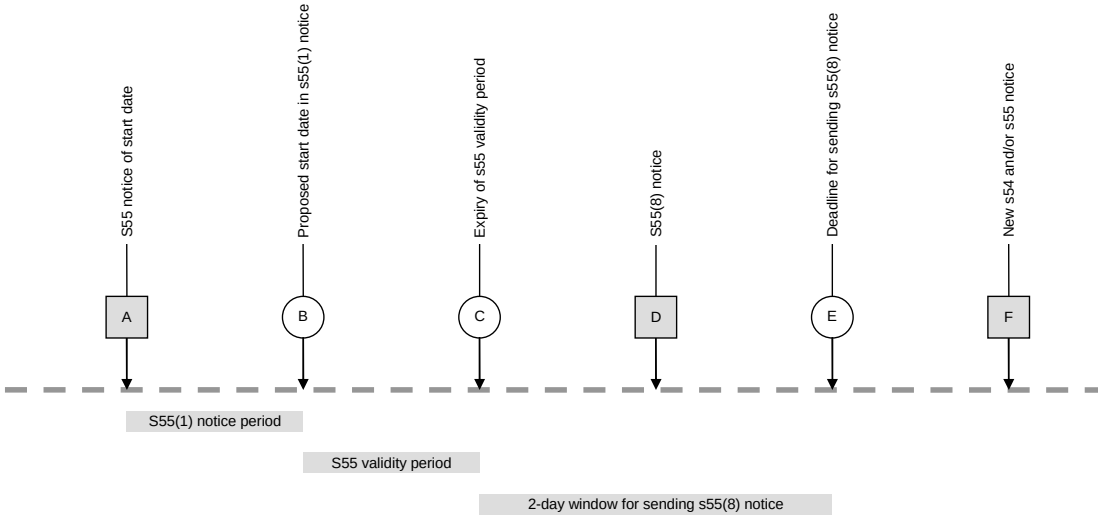
This example assumes that the actual notice period is more than the statutory minimum. The works start after the proposed start date and the estimated end date is revised accordingly (not shown).

Ref.	Description	Derivation	Validation rules	Notes
A	Send S55 Notice of Start Date	Day received		Should provide at least 3 days notice of estimated start date for Minor works.
B	Latest date for street authority to issue directions	B = A + 2 days		Statutory maximum 2-day response period.
C	Earliest start date	C = A + 3 days		Statutory minimum 3 notice period.
D	Proposed start date	As provided in s55 notice	D >= C	For permits, Earliest Start date = D
E	Actual start date	As provided in s74 actual start date notice	D <= E <= F	S56(1A) directions can be given at any time whilst works are in progress.
F	Latest start date	F = D + 1 days		Statutory maximum 2-day validity period (for permits, applies only in Category 3/4 non-TS streets); otherwise F=D.
G	Latest date for confirming lapsed notice– no permit equivalent	G = F + 1 day		No later than the end of the next working day after the expiry of the validity of the s55 (1) notice.
H	Estimated end date	As provided in s55 notice	(H – D) <= 2	Works duration should be 3 days or less.

Section 56(1A) Directions do not apply to permits, although permits may be varied by the Street Authority.

S55(8) notice - confirmation of works not starting by the end of the validity period of a s55(1) notice

No Permits Equivalent, although a Cancellation can be used at any time

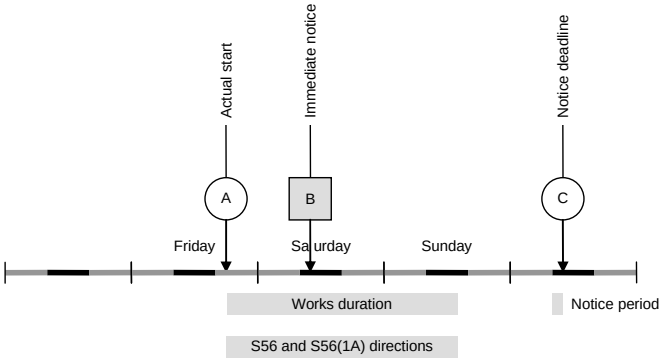


This example assumes that work has not started by the end of the validity period of the s55(1) notice. A s55(8) notice is sent by the end of the next working day. The s55(8) notice confirms that the work has been programmed for a later date. A new s54 and/or s55 notice is later submitted.

Ref.	Description	Derivation	Validation rules	Notes
A	S55(1) Notice of Start Date	Day received		
B	Proposed start date	As provided in s55 notice		
C	Expiry of s55 validity period (latest start date)	C = B + (1 or 4) days		5 day validity period for Major and Standard works; 2 day validity period for Minor works.
D	S55(8) notice	Day received	C <= D <= E	
E	Deadline for submitting s55(8) notice	E = C + 1		Notice should be received no later than the end of the next working day after the expiry of the validity of the s55 (1) notice.
F	New s54 and/or s55 notice			

S55(1)/s57 notice of Immediate works

Corresponding Application for Permit

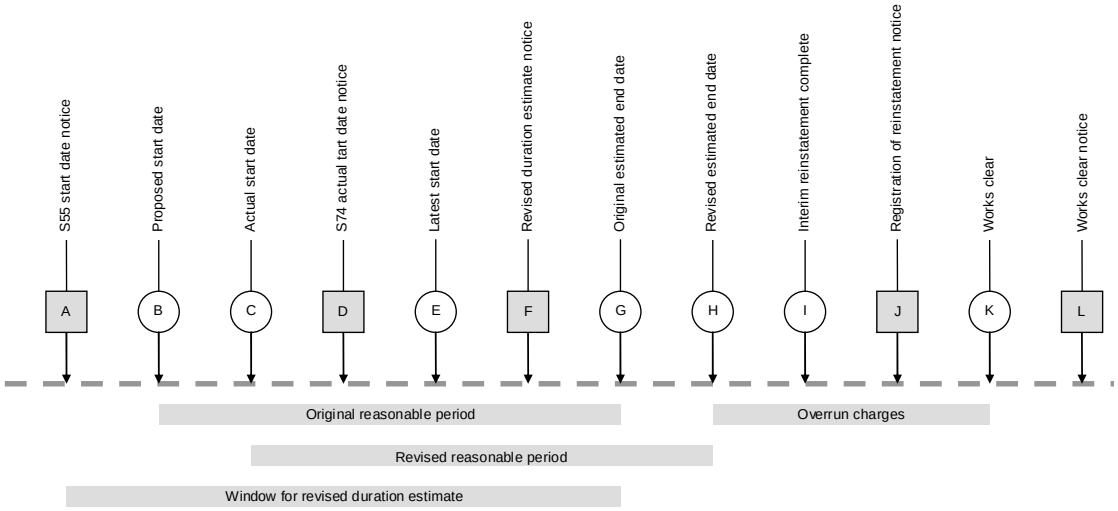


This example assumes that the Immediate works is identified and started after 16:30 on Friday. The street authority is not able to receive and respond to notices out of working hours and the notice should therefore be received within 2 hours of the start of the next working day, i.e. 10:00 on the following Monday.

Ref.	Description	Derivation	Validation rules	Notes
A	Actual start date	As provided in the s55 or s57 notice		Start time is not provided in notice.
B	Notice of Immediate Works	Date and time received	B <= C	
C	Deadline for receiving Immediate notice	C = A + 2 hours		Notice must be received no later than 2 hours after work starts. Notice can be sent in before work starts if appropriate.

Section 56 and 56(1A) Directions do not apply to permits, although permits may be refused /conditions applied, or subsequently varied by the Street Authority.

S74 – street works from proposed to clear

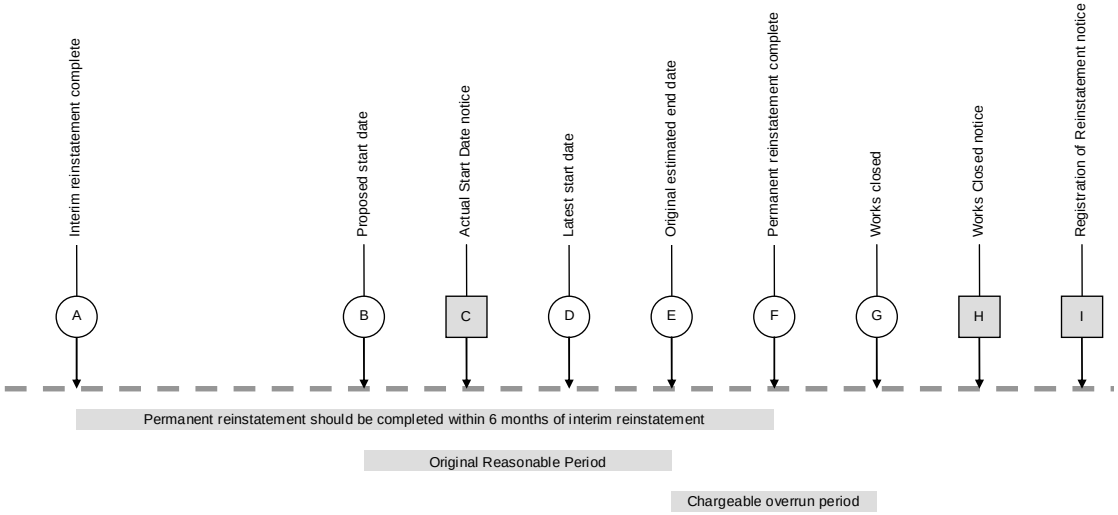


This example assumes that the street authority does not challenge either the original or revised Reasonable Period. The works still overrun and a chargeable period is shown. The duration of the works is longer than the Prescribed Period (2 days). The works are not recorded as clear until after the reinstatement is completed (e.g. road markings).

Ref.	Description	Derivation	Validation rules	Notes
A	S55 notice	Day received		
B	Proposed start date	As provided in s55 notice		
C	Actual start date	As provided in s74 Actual Start Date notice	B <= C <= E	
D	S74 Actual Start Date notice	Day received	D <= (C + 1) day	Notice should be given no later than the end of the next working day after the day on which the works started.
E	Latest start date	See s55 timelines		
F	S74 Revised Duration Estimate notice or Permit variation	Day received	F < G	A notice of Revised Duration Estimate can be given any time before the estimated end date, i.e. before the end of the original Reasonable Period.
G	Original estimated end date	As provided in s55 notice		
H	Revised estimated end date	As provided in Revised Duration Estimate notice	H > G	A notice is not required if the revised date is earlier than the original estimate.
I	Interim reinstatement completed	Actual date of completion of reinstatement(s) As declared in the Registration notice		
J	Registration of Reinstatement notice (interim)	Day received	J <= (I +10)	Registration notice should be received within 10 days of completing the reinstatement(s) – may be before of after the Works Stop notice.

Ref.	Description	Derivation	Validation rules	Notes
K	Works clear	Actual date when works are clear as declared in the s74 Works Stop notice		Following removal of all signs, guarding, spoil and materials etc. from the site.
L	Works Stop notice	Day received	L <= (K + 1)	Notice should be given no later than the end of the next working day after the day on which the works were clear.

S74 – street works from interim reinstatement complete to permanently closed

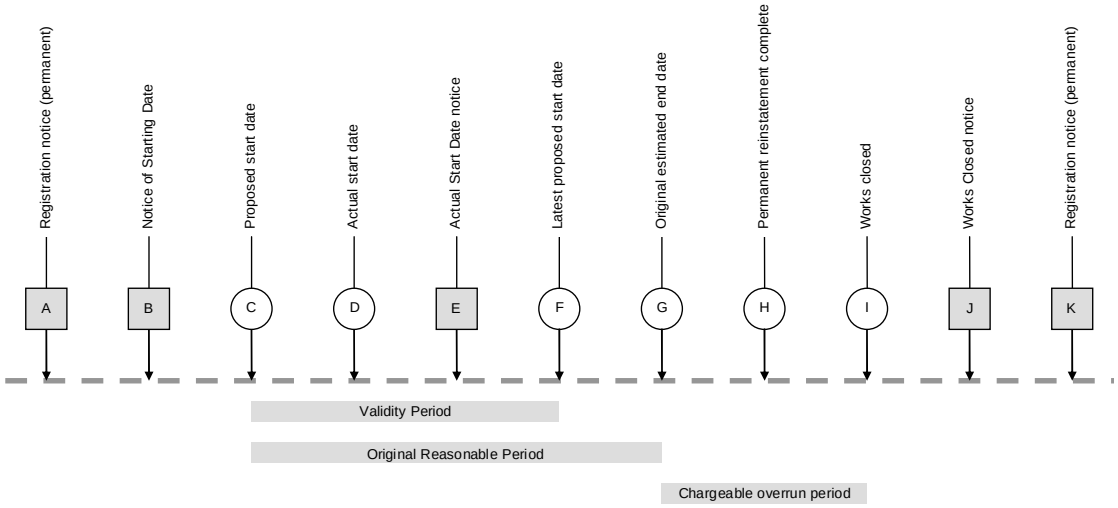


This example assumes that the street authority does not challenge the estimated duration. The undertaker does not issue a Revised Duration Estimate notice. The permanent reinstatement works overrun and a chargeable period is shown. The s55 estimated start date notice for permanent reinstatement works is not shown. The duration of the works is longer than the Prescribed Period. The works are closed immediately following completion of reinstatement.

Ref.	Description	Derivation	Validation rules	Notes
A	Interim reinstatement complete	Actual date of completion of interim reinstatement(s) as declared in the Registration notice (interim)		
B	Proposed start date	As provided in s55 notice		
C	S74 Actual Start Date notice	Day received	B <= C <= D	
D	Latest start date	See s55 timeline	See s55 timeline	
E	Original estimated end date	As provided in s55 notice		
F	Permanent reinstatement complete	Actual date of completion of reinstatement(s) as declared in the Full Registration notice (permanent)		
G	Works clear	Actual date when works are clear as declared in the Works Stop notice		Following removal of all signs, guarding, spoil and materials etc. from the site.
H	Works Stop notice	Day received	H <= (G + 1)	Notice should be given no later than the end of the next working day after the day on which the works were clear.

Ref.	Description	Derivation	Validation rules	Notes
I	Registration of Reinstatement notice (permanent)	Day received	I <= (F + 10)	Registration notice should be given within 10 days of completing the reinstatement(s) – may be before of after the Works Stop notice..

S74 – street works for remedial reinstatement (non-Immediate)

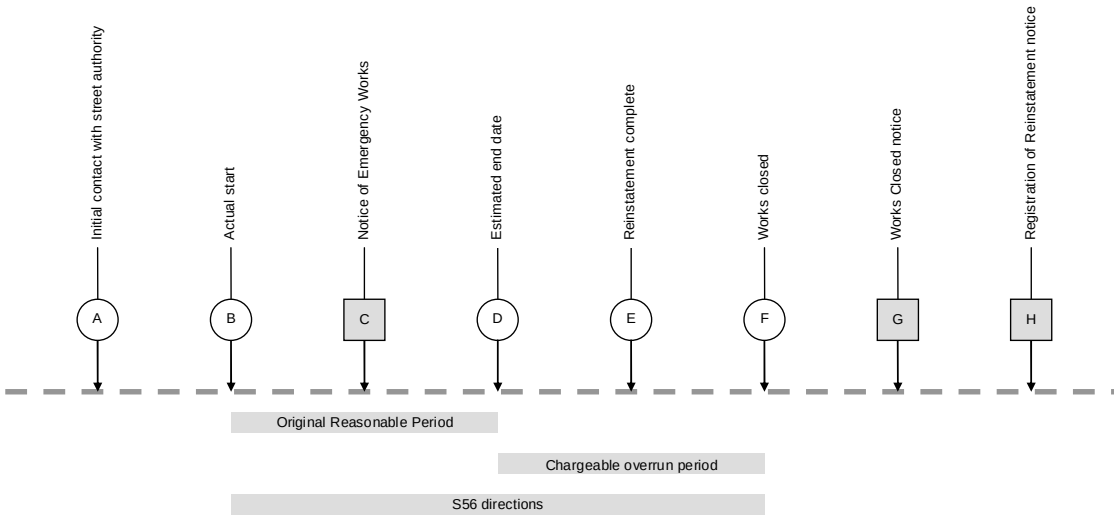


This example assumes that the street authority does not challenge the Reasonable Period. The undertaker does not issue a Revised Duration Estimate notice. The remedial reinstatement works overrun and a chargeable period is shown. The works are closed immediately following completion of reinstatement (this example is assuming the reinstatement is permanent).

Ref.	Description	Derivation	Validation rules	Notes
A	Previous Registration of Reinstatement notice			See timeline for street works from interim reinstatement complete to closed
B	S55 notice for planned remedial works	Day received		
C	Estimated start date	As provided in s55 notice		
D	Actual start date	As provided in s74 Actual Start Date notice	C <= D <= F	Should be within notice validity period.
E	S74 Actual Start Date notice	Day received	E <= (D + 1)	Notice should be given no later than the end of the next working day after the day on which the works started.
F	Latest start date	See s55 timelines		
G	Original estimated end date	As provided in s55 Remedial Proposed notice		Remedial works do not require a s54 notice.
H	Reinstatement complete	Actual date of completion of reinstatement(s) as declared in Registration notice		
I	Works clear	Actual date when works are clear) as recorded in Works Stop notice		Following removal of all signs, guarding, spoil and materials etc. from the site.
J	Works Stop notice	Day received by SA	J <= (I + 1)	Notice should be given no later than the end of the next working day after the day on which the works were clear.

Ref.	Description	Derivation	Validation rules	Notes
K	Registration of Reinstatement notice (permanent)	Day received by SA	K <= (H +10)	Registration notice should be given within 10 days of completing the reinstatement(s) – may be before of after the Works Stop notice...

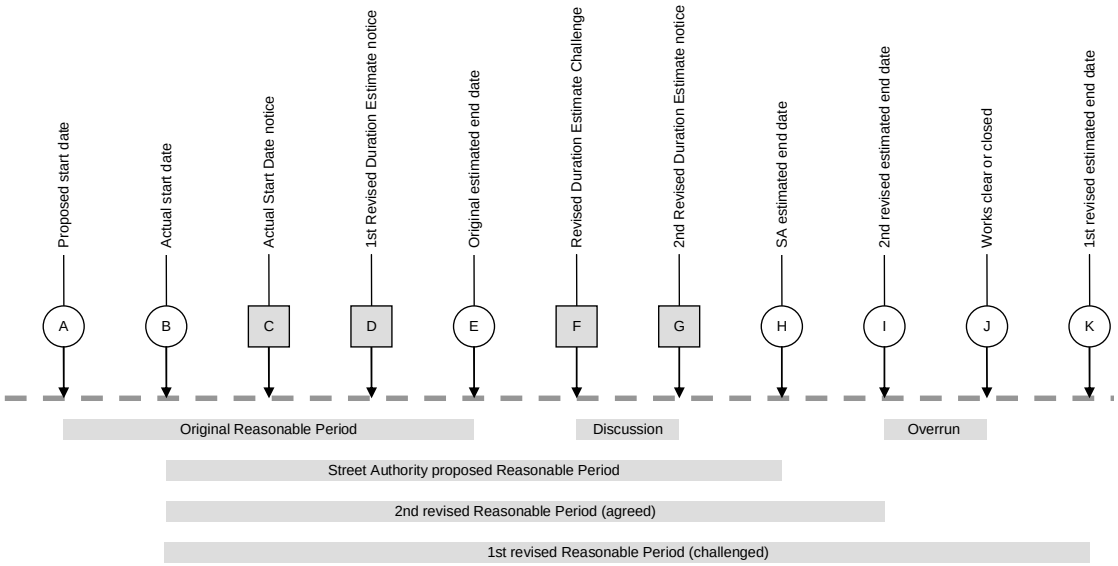
S74 – street works for remedial reinstatement (dangerous)



This example assumes that the undertaker discovers the necessity for remedial works in a traffic-sensitive street and considers that the reinstatement is dangerous. The undertaker informs the street authority by telephoning a specified number before starting work. The street authority does not challenge the estimated duration. The undertaker does not issue a Revised Duration Estimate notice. The remedial reinstatement works overrun and a chargeable period is shown. The works are closed immediately following completion of reinstatement (this example is assuming the reinstatement is permanent).

Ref.	Description	Derivation	Validation rules	Notes
A	Initial contact with street authority	Date of telephone call as recorded by the street authority		
B	Actual start	Date and time declared in s57 notice		
C	S57 Notice of Emergency Works	Date and time received	C <= (B + 2 hours)	
D	Estimated end date	As declared in s57 notice	D > B	
E	Reinstatement complete	Actual date of completion as declared in Registration of Reinstatement notice		
F	Works clear	Actual date site was cleared as declared in Works Stop notice		Site is clear of all signing and guarding etc.
G	Works Stop notice	Day received	G <= (F + 1)	Notice should be given no later than the end of the next working day after the day on which the works were clear.
H	Registration of Reinstatement notice	Day received	H <= (E + 10)	Registration notice should be given within 10 days of completing the reinstatement(s)) – may be before of after the Works Stop notice...

S74 – challenge to duration estimate



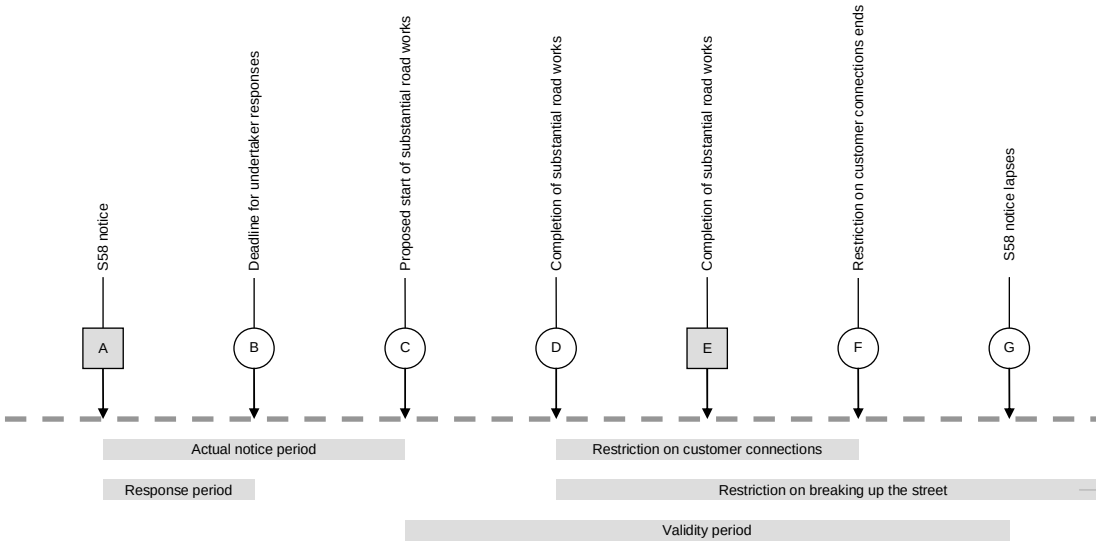
This example assumes that the street authority does not challenge the original estimated duration from the s55 notice. The undertaker issues a Revised Duration Estimate (RDE) notice after works have commenced. The street authority challenges the revised duration and provides its own (reduced) estimate. Following discussion, the undertaker issues a second revised duration estimate as agreed with the street authority (which is then not opposed).

Ref.	Description	Derivation	Validation rules	Notes
A	Proposed start date	As provided in s55 notice		
B	Actual start date	As declared in s74 Actual Start Date notice		
C	Actual Start Date notice	Day received by SA	C <= (B + 1)	Notice of Actual Start Date should be given no later than the end of the next working day after the day on which the works started.
D	1st Revised Duration Estimate notice (from undertaker)	Day received by SA	D <= E	Undertaker should issue RDE before end of the current Reasonable Period.
E	Original estimated end date	As provided in s55 proposed works notice		
F	Revised Duration Challenge (by SA)	Day received by undertaker	F <= D + 2	SA should challenge duration estimate within 2 days.
G	2nd Revised Duration Estimate notice (from undertaker)	Day received by SA	G <= F + 2	Undertaker should respond within 2 days.
H	SA estimated end date	As provided in Revised Duration Challenge notice		Latest end date derived from SA's estimate of duration.
I	2nd Revised estimated end date	As provided in 2nd Revised Duration Estimate notice from undertaker	E < I < K	Could be before or after SA's estimated end date.
J	Works Stop notice	Day received by SA		
K	1st revised estimated end date	As provided in 1st Revised Duration Estimate notice from		

Ref.	Description	Derivation	Validation rules	Notes
		undertaker		

Permits Only - Note that the Revised Duration application constitutes a Permit Variation. By default, the granting of the permit for the revised duration will also change the Reasonable Period for Section 74 purposes to the revised permit dates. However, a Duration Challenge from the Street Authority may be used to amend the Reasonable Period to the original period or some intermediate timeframe. In this case, although the permit has been issued for the full time, Section 74 charges will apply from the end of the period defined by the Duration Challenge.

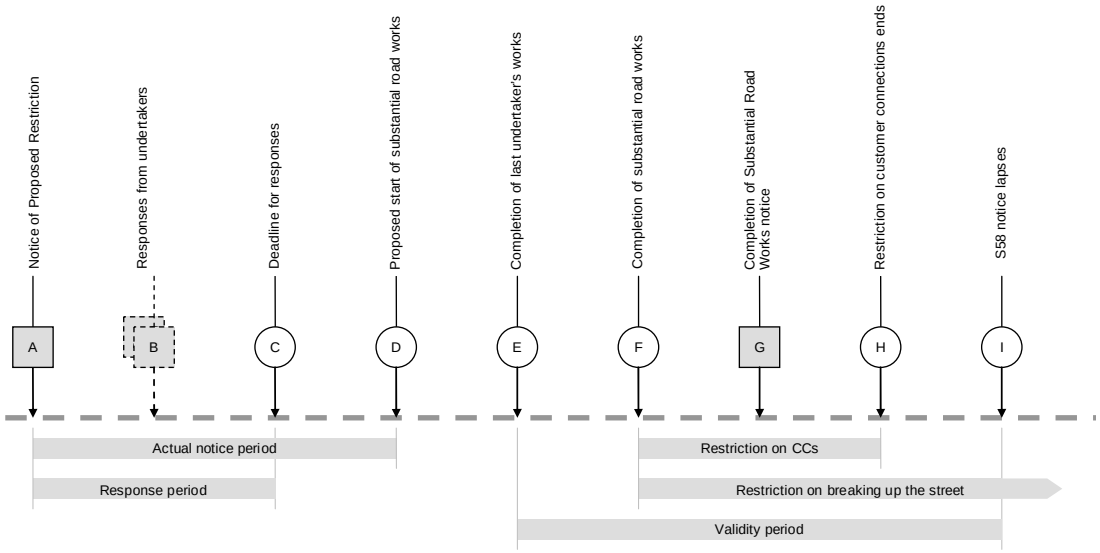
S58 restriction following substantial road works – no undertakers' works



This example assumes that there are no undertaker works as a result of the s58 proposed restriction notice. Notifications for undertaking the road works are not shown. There is no link between the notification and s85 notice.

Ref.	Description	Derivation	Validation rules	Notes
A	S58 Proposed Restriction notice from street authority	Day received by undertakers		Different undertakers could receive the notice on different days.
B	Deadline for any undertaker responses	A + 20 days		Undertakers should respond within 20 days
C	Proposed start date of substantial road works	As provided in notice of proposed restriction	C >= (A + 3 months)	Undertakers should be given at least 3 months notice.
D	Actual completion date of substantial road works	As declared in HA Works Stop notice		
E	Notice of Completion of Substantial Road Works	Day received by undertakers	E > D	No maximum period is prescribed.
F	Last day of restriction on customer connections	D + 20 days		20-day embargo on customer connections.
G	S58 notice lapses	C + 6 months		S58 notice lapses and no restriction is created if road works have not started (see definition of month).

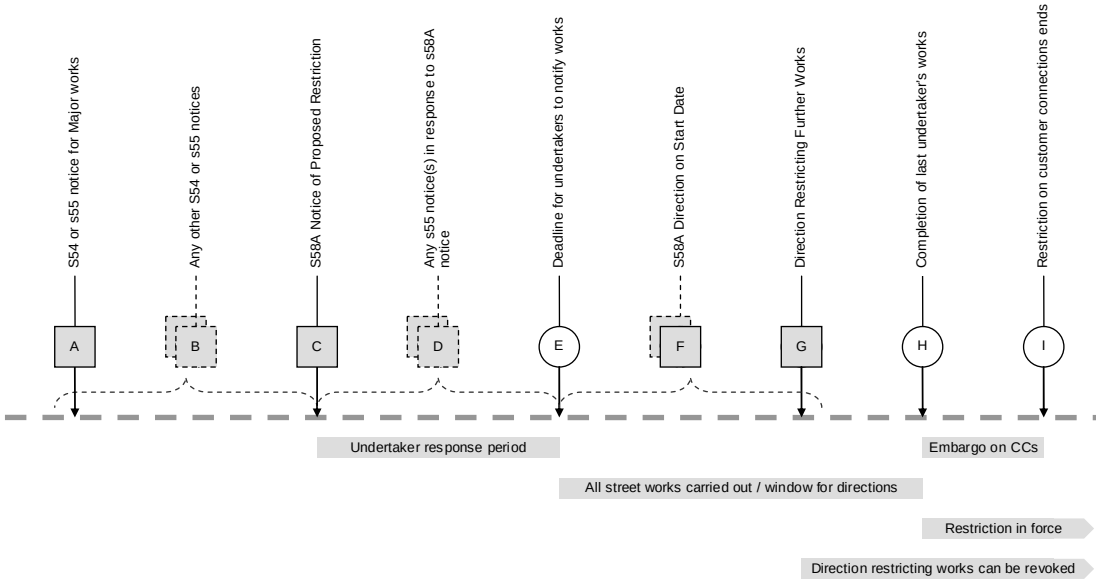
S58 restriction following substantial road works – with undertakers' works



This example assumes that there are one or more undertakers' works as a result of the s58 notice. Notifications (including any s56 directions) for undertaking the road works and street works are not shown. The original proposed start date for the road works does not change and therefore the street authority does not issue a revised restriction notice. However, the last undertaker's works are not completed until after the proposed start date for the road works. There is no link between the notification and s85 notice.

Ref.	Description	Derivation	Validation rules	Notes
A	S58 Notice of Proposed restriction from street authority	Day received by undertakers		
B	Any undertaker s55 notices in response to s58 notice	Day received by SA	A >= B >= C	
C	Deadline for any undertaker responses	A + 20 days		
D	Proposed start date of substantial road works	As provided in Proposed Restriction notice	D >= (A + 3 months)	Undertakers should be given at least 3 months notice.
E	Completion of last undertaker's works	As declared in s74 Works Stop notice		
F	Actual completion date of substantial road works	As declared in HA Works Stop notice		
G	Notice of Completion of Substantial Road Works	Day received by undertakers	G > F	No maximum period is prescribed.
H	Last day of restriction on customer connections	F + 20 days		20-day embargo on customer connections.
I	S58 notice lapses	E + 6 months		S58 notice lapses and no restriction is created if road works have not started.

S58A restriction following substantial street works



Any Immediate works, exempted works or other works where consent has been obtained from the SA are not shown.

The example assumes that the street authority sends a single notice of proposed restriction.

Ref.	Description	Derivation	Validation rules	Notes
A	S54 or s55 notice for Major street works	Day received by the SA		This notice results in street authority decision to create a restriction.
B	Any other s54 or s55 notices that are received before the SA issues a notice of proposed restriction	Received by SA any day prior to the issue of the notice at C		
C	S58A Notice of Proposed Restriction	Day sent by the SA		
D	Any s54 or s55 notices submitted in response to the s58A notice	Day received by the SA	C > = D >= E	This may also include s54 and s55 notices that undertakers were planning to send prior to the notice of proposed restriction.
E	Deadline for s55 notices in response to the s58A notice	Date specified in the s58A notice (or next working day if a non-working day)	E >= C + 20	The street authority must give at least 20 days notice. Responses must be received by 16:30 on this day.
F	The SA should issue a s58A Schedule 3A 3 direction on starting date to all promoters that have submitted notices at A, B and D	Any time between the end of the response period and completion of all works at H	F > E	The HA may also wish to carry out road works before the restriction.
G	S58A Schedule 3A 4 Direction Restricting Further Works	Any time between the end of the response period and completion of the last works at H	E > G > H	
H		Date declared in the Works Stop Notice		From the last undertaker to complete their works following the initiation of this procedure.

Ref.	Description	Derivation	Validation rules	Notes
I	Last day of restriction on customer connections	H + 20 days		

9.PAPER NOTIFICATIONS

9.1Introduction

This section should be read in conjunction with section 8.3.1 of the Notices Code of Practice and 10 of the Permits Code of Practice.

Notifications may be given via EToN or in paper form. The term “paper” is used to mean any non-EToN method including delivery by post or in person, or other electronic methods such as fax or e-mail. All works notifications given in paper form should comply with the requirements set out in this technical specification. Paper notifications relating to inspections should be in the format specified in the Inspections Code of Practice.

The regulations include a sunrise provision for all statutory undertakers and primary notice authorities to move to an all-electronic noticing system by April 2009. Other activity promoters such as those operating under section 50 of NRSWA will be encouraged to move to such a system within 5 years of the publication of the Code. After this time, sending of notifications by fax, post or hand delivery will only be allowed if the electronic process is unavailable.

Requirements for paper notifications apply in two different situations:

1. EToN users in the event of temporary unavailability of the sender’s notice management system.

2. Non-EToN users such as s50 street works licensees.

9.2Paper notifications for non-EToN users

In view of the relatively small numbers of such users and paper notifications, and the requirement to eventually move to electronic systems (e.g. EToN website), the layout and appearance of standard paper notification forms has not been prescribed.

Paper notifications need only contain the minimum level of information required for statutory noticing purposes, and should be supplemented with separate communications via telephone, post and e-mail etc. as necessary. There will also be greater reliance on free-text comments within the notifications. It is suggested that paper notification forms for use by promoters should consist of the following:

1. A single form for all statutory notifications.

2. A separate multi-part form for registering reinstatements.

A suggested form layout and style for notices is shown in Figure 9.1 and Permits in Figure 9.2. This is intended as a common format for all works-related transactions, including Section 50 licences. Additional sheets should be used as necessary for recording site details and providing sketches of reinstatements etc. Paper notifications must include all of the information shown in suggested layouts as a minimum.

Responses from primary notice authorities to non-EToN users should use copies of the promoter’s paper notification endorsed with the directions in free text form.

In completing the paper forms, the user should apply all of the data validation rules specified in this document for EToN 5.

Figure 9.1 Paper notice form for manual data entry

NEW ROADS AND STREET WORKS ACT 1991 LOGO

NOTICE OF WORKS INCLUDING RESPONSES

TO

FROM

REFERENCE

WORKS REFERENCE

PURPOSE

NEW ACTIVITY		**ACTIVITY CONF**		**SA RESPONSE**		**CANCELLATION**	
ACTIVITY START		**ACTIVITY STOP**		**REVISED DUR.**		**OTHER**	

TIMING

DATE OF ISSUE		**TIME OF ISSUE (Immediate only)**	
EXPECTED START DATE		**EXPECTED COMPLETION DATE**	
ACTUAL START DATE		**REVISED COMPLETION DATE**	
ACTUAL STOP DATE			

WORKS CATEGORY

Emergency (2 hrs after)		**Urgent (2 hrs after)**		**Minor (3 days)**		**Standard (10 days)**		**Major (10 days)**	

REMEDIAL REINSTATEMENT

Dangerous (2 hrs after)		**Other (3 days)**	

SPECIAL ENGINEERING DIFFICULTY

IS SED INVOLVED? (Y/N)		**IF YES HAS THE RELEVANT AUTHORITY APPROVED THE WORKS? (Y/N)**	

LOCATION DETAILS

DESCRIPTION OR HOUSE NAME OR NUMBER	
STREET NAME	
LOCALITY, TOWN, COUNTY	
USRN	
POST CODE	
NGR	

DESCRIPTION OF WORKS & AUTHORITY COMMENTS

Figure 9.2 Paper permits form for manual data entry

TRAFFIC MANAGEMENT ACT 2004 LOGO

PERMIT APPLICATION INCLUDING RESPONSES

TO

FROM

REFERENCE

WORKS REFERENCE

APPLICATION SEQUENCE **RESPONSE SEQUENCE**

PURPOSE

NEW ACTIVITY **ACTIVITY CONF** **SA RESPONSE** **CANCELLATION**

ACTIVITY START **ACTIVITY STOP** **REVISED DUR.** **OTHER**

TIMING

DATE OF ISSUE **TIME OF ISSUE (Immediate only)**

EXPECTED START DATE **EXPECTED COMPLETION DATE**

ACTUAL START DATE **REVISED COMPLETION DATE**

ACTUAL STOP DATE

WORKS CATEGORY

Emergency (2 hrs after) **Urgent (2 hrs after)** **Minor (3 days)** **Standard (10 days)** **Major (10 days)**

REMEDIAL REINSTATEMENT

Dangerous (2 hrs after) **Other (3 days)**

SPECIAL ENGINEERING DIFFICULTY

IS SED INVOLVED? (Y/N) **IF YES HAS THE RELEVANT AUTHORITY APPROVED THE WORKS? (Y/N)**

LOCATION DETAILS

DESCRIPTION OR HOUSE NAME OR NUMBER

STREET NAME

LOCALITY, TOWN, COUNTY

USRN

POST CODE

NGR

DESCRIPTION OF WORKS & AUTHORITY COMMENTS

9.3 Paper notifications (other than FPNs) produced by EToN systems

The data groups and elements that apply to paper notifications are the same as defined in Sections 4 and 5. EToN addressing data does not apply; the paper notification should include the names of the sender and the intended recipient. Users may design their own forms subject to the following requirements:

1. The form must contain all of the necessary (mandatory and relevant conditional) information in accordance with the requirements and validation rules specified in sections 4 and 5.

2. The details must be provided in the order defined in Section 5 to ensure consistency in interpretation and to facilitate data entry.

3. The plain English version of the data element names should be used, i.e. by inserting a space between each word within the name, e.g. Works Reference.

4. Data fields that are held in enumerated form should be printed in both coded form and translated into English description.

Users should comply with the relevant timing rules as defined in section 8.

9.4 FPN forms

Where EToN is used for delivery of FPNs (FPN and notice withdrawing an FPN), receiving systems should be capable of providing screen display and hardcopy according to the requirements in section 11.4 of the Notices Code of Practice or section 18 of the Permits Code of Practice, i.e. fixed templates should be populated with the data provided in the FPN notification and the sender's OD file. If the FPN (or notice of withdrawal) is sent by post or fax, or as a pdf attached to an email should reproduce the format set out in the Co-ordination Code of Practice.

10.DATA EXCHANGE WITH THE NSG HUB

10.1Introduction

The scope of this data exchange is summarised in section 2.1.

The NSG Hub provides a central facility for collating, validating and distributing NSG and ASD data that underpins the operation of EToN and statutory street works registers. It also acts as a central repository for OD data. The Hub is managed by the NSG Custodian under the terms of the Mapping Services Agreement (MSA) with local government which is managed by LGIH.

Validated, up-to-date NSG and OD data will be published on the central NSG website on pre-defined dates at monthly intervals for downloading by authorised users according to their geographical area(s) of interest.

The data format for LSG and ASD is described in the DTF 7.1 specification, available from the NSG Custodian's website (www.thensg.org.uk).

The NSG Custodian will continue to make data available in the legacy NSG format, described in section 10.5 of this document, to those organisations that require it until 31 March 2010. However, organisations are advised to adopt the new DTF 7.1 download format as soon as possible after 1 April 2009.

OD data will be exchanged (uploaded and downloaded) as XML files as specified in section 5 and section 10.6.

10.2Compliance with BS7666

The current edition of BS7666 (2006) Spatial datasets for geographical referencing is in four parts:

Part 0 General model for gazetteers and spatial referencing (supersedes BS7666-3:2000) and BS7666-4:2000)

Part 1 Specification for a street gazetteer (supersedes BS7666-1:2000)

Part 2 Specification for a land and property gazetteer (supersedes BS7666-2:2000)

Part 5 Specification for a delivery point gazetteer (new part)

Street data must be created and maintained in accordance with the revised BS7666 part 1 standard and the associated DEC-NSG guidance documents produced by LGIH. LSGs must be created at level 3 and include all records required to describe the street in accordance with BS7666-1: 2006 and the DEC-NSG.

The BS7666:2006 compliant upload and download format is described in the DTF 7.1 specification. The legacy download format, which will be discontinued from 1 April 2010, is defined in this specification. Note that the definition, structure, and validation rules for the fields remain the same and therefore the different field names have no affect on the data being transferred.

10.3 Responsibility for creation of NSG, ASD and OD data

Each local highway authority (LHA) is responsible for creating and maintaining a Local Street Gazetteer (LSG), covering all the streets in their geographic area in accordance with the DEC-NSG. The LHA should include all streets that are public highway regardless of whether or not they are the primary notice authority for that street. LHAs are responsible for collecting and collating the street information from other authorities within their area, which may include:

- District and borough authorities within English counties (street naming authorities).
- Royal Parks.

Any private streets of which the LHA is aware should also be included within the LSG.

Table 10.1 shows the responsibilities for creation of street and OD records and submission to the NSG Custodian.

The Highways Agency (HA), which is responsible on behalf of the Secretary of State for Transport for motorways and trunk roads, maintains its own gazetteer, known as the Trunk Road Street Gazetteer (TRSG). The TRSG will be hosted on the NSG Hub. The HA must ensure that the TRSG can be integrated with the relevant LSGs to form a seamless national dataset, i.e. NSG.

A number of different authorities can create and upload their own ASD for streets in the NSG. These authorities include the LHA, other highway authorities (e.g. Highways Agency), other primary notice authorities (TfL), relevant authorities (Network Rail) and the Welsh Assembly. Any other authorities (transport, bridge and sewer authorities) or undertakers with a legitimate interest in a street should request the relevant highway authority to create records on their behalf. Note that all LSG, TRSG and ASD uploads must be in DTF 7.1 format.

Undertakers are required to serve copy notifications on the local primary notice authority when carrying out works in private streets. The local Highway Authority is responsible for creating the necessary (Additional Street Data) records to declare a “Primary Notice authority” interest in private streets within their area.

It is important that the integrity of the relationship between the NSG and ASD is maintained at all times. Before making changes to the LSG, the LHA should consult with other authorities who have created ASD to ensure that any necessary changes are made.

Authorities who create ASD must also create OD for their own organisation and include this with their submission to the NSG Custodian.

10.4 Upload of NSG and ASD data

All incoming files to the NSG must be generated in accordance with the DTF 7.1 specification.

Detailed guidance and rules for uploading and compliance testing are available from the NSG Custodian.

Table 10.1 Responsibilities for the creation of LSG, ASD and OD data

Organisation	LSG street records	ASD records			OD data
		Additional street data	Rein. designation	Special designation	
Local highway authority	The LHA is responsible for submitting all street records within their own geographical area.	Shall create records with INTEREST_TYPE = 1 for streets where they are the street authority and for private streets within their area. May create other records if they wish to express an interest in a street.	Shall create this record for streets where they are the street authority, and for private streets.	Shall create this record for designations they have made including those made at the request of other authorities.	Shall create their own OD and, optionally, AOI.
Other street authority	The Highways Agency shall create records for motorways and trunk roads.	Shall create records with INTEREST_TYPE = 1 for streets where they are the street authority. May create other records if they wish to express an interest in a street.	Shall create this record for streets where they are the street authority.	Shall create this record for designations they have made including those made at the request of other authorities.	Shall create their own OD and, optionally, AOI.
Private street manager	The local highway authority is responsible for creating records for private streets.	The local highway authority is responsible for creating records for private streets.	The local highway authority is responsible for creating records for private streets.	The local highway authority is responsible for creating records for private streets.	The local highway authority is responsible for creating records for private streets
Relevant authority		Follow procedure in Co-ordination Code of Practice section 4.3.1.			Shall create their own OD and, optionally, AOI.
Statutory undertaker		Follow procedure in Co-ordination Code of Practice section 4.3.1.			Shall create their own OD and AOI.

Blank = **cannot** create records

10.5Legacy NSG CSV Download Format

This section describes the legacy download format in which the NSG will be made available for organisations that are not yet able to download data in the DTF 7.1 format. The format described in this section must not be used for uploads and will be discontinued from 1 April 2010.

10.5.1NSG and ASD record structure

The NSG and ASD download set will normally contain a number of different records classified by record type number as shown in the following table:

Table 10.2 Transfer set record structure

Record name	Type	Comments
HEADER	10	
TRAILER	99	
STREET	11	Includes basic street data required for a level 1 gazetteer. A street's geometry is defined simply by its start and end co-ordinates.
STREET_CROSS_REFERENCE	12	A cross reference between different representations of the street name.
ELEMENTARY_STREET_UNIT	13	This record is required for a level 2 gazetteer. Streets are defined as in level 1, but with the addition of Elementary Street Units (ESUs) which define the start and end co-ordinates of contiguous lengths of street between adjacent junctions.
ELEMENTARY_STREET_UNIT_COORDINATE	14	Streets and ESUs are defined to level 2, but with the addition of intermediate co-ordinates (where necessary) to describe the full geometry of an ESU. These records are mandatory for level 3 street gazetteers. They are not present in level 1 or 2 street gazetteers.
ADDITIONAL_STREET_DATA	21	Corresponds with record type 61 in DTF 7.1
REINSTATEMENT_DESIGNATION	22	Corresponds with record type 62 in DTF 7.1
SPECIAL_DESIGNATION	23	Corresponds with record type 63 in DTF 7.1

Note that the ASD record type numbers defined in this specification (as opposed to those defined in DTF 7.1) are used throughout this document.

10.5.2Physical file structure

Data will be downloaded from the Hub as a UTF-8 comma separated value (CSV) transfer set..

All files will contain HEADER and TRAILER records as the first and last records in the file. The order of all other records within each file is unimportant.

Each record has a record Identifier (RECORD_IDENTIFIER), as its first field. This field is used to define the contents of the record, and determines how the remainder of the record is to be interpreted. The record identifier is not part of the BS7666 standard, but is used to enable the simple transfer of NSG data in CSV format.

Physical records in the transfer set will be delimited by carriage-return/line feed.

All legacy LSG and ASD files dowloaded from the NSG Hub will follow the following file naming convention:

XXXX_NN.CSV

where

XXXX is the user organisation code (unique local authority ID). This will include leading zeros, where appropriate, and

NN is the file type identifier.

For LSG data the file type identifier is 01 for NSG data (record types 11-14); for ASD data the file type identifier is the record type number (21, 22 or 23) as defined below.

In the case of OD files the XML file should be named as follows:

XXXX_OD.xml

10.5.3Data format for CSV transfer

Each field must be separated from the previous field by a comma.

String type fields must be contained within double quotation marks.

Double quotes within data should be represented as 2 double quotes together as current conventions. New lines and other control characters (e.g. tabs) are not permitted within fields.

Commas must not be provided within non-string fields (i.e. thousand separators must not be used for numeric fields).

Dates must be provided in the format YYYY-MM-DD.

Where a field has no value in a record, two commas must be placed together in the record, one for the end of the previous field and one for the end of the null field.

In each of the records the fields must be included in the order that they occur in the following record type definition tables.

10.5.4CSV Record definitions

Each record as identified in Table 10.2 is specified in tabular format as follows:

Column heading	Meaning
Name	The name of the field.
Comments	A description of the field, or other notes or comments
Data type	The standard data type as defined previously (see Table 4.2)
Maximum length	
Value range	The allowable range of values for the field
Obligation	As defined previously (see section 5.2). Conditional rules are specified beneath each record type definition table. Conditions may range from c1 to c99.

All fields are defined using one of the following data types. A single character abbreviation is used to indicate the format and type of a field.

Data type	Abbrev.	Comments
Date	D	Month and day will have leading zeros where necessary.
Time	T	
Integer	I	May contain any positive numeric value. Fields do not need leading zeros and they will be ignored if present. Fields must not have thousands separators (e.g. 134987 not 134,987).
String	S	All alphanumeric fields will be enclosed in double-quotes ("). The double-quotes are ignored as part of the text.

The structure of each record is described in the following sections.

Note that where examples of records are included, spaces are used to improve readability; spaces should **not be used** in the actual transfer files.

10.5.5HEADER record

The HEADER record is compulsory for all transfer sets. The HEADER record must be the first record in every file.

Field	Description	Type	Len	Value range	Obl.
RECORD_IDENTIFIER	Identifies the record as a HEADER record	I	2	10	m
CUSTODIAN_NAME	Name of the organisation providing the data	S	40		m
LOCAL_CUSTODIAN_CODE	A code to identify the user organisation	I	4	DfT data capture code	m
PROCESS_DATE	Date when the transfer set was created.	D	10	1998-04-01 to present date	m
VOLUME_NUMBER	No longer used	I	2	1	m

Example: **10, ”DEVON COUNTY COUNCIL”, 1100, 2007-04-09, 1**

10.5.6TRAILER record

The TRAILER record is compulsory for all transfer sets. The TRAILER record must be the last record in every file.

Field	Description	Type	Len	Value range	Obl.
RECORD_IDENTIFIER	Identifies the record as a TRAILER record	I	2	99	m
NEXT_VOLUME_NUMBER	No longer used	I	2	0	m
RECORD_COUNT	Number of records in the volume excluding the HEADER and TRAILER records	I	14		m

Example: **99, 0, 4563**

10.5.7STREET record

This is an interim record that contains basic information about the real-world street. It is not a type 11 record and does not conform to DTF7.1.

Field	Description	Type	Len	Value range	Obl.
RECORD_IDENTIFIER	Identifies the record as a STREET record	I	2	11	m
USRN	Unique street reference number	I	8		m
RECORD_TYPE	Street record type	I	1	1 Designated street name 2 Street description 3 Street number 4 Unofficial street name	m
ENG_STREET_DESCRIPTOR	Name, description or street number (English Descriptor)	S	100		m
ENG_LOCALITY_NAME	Locality name (English Descriptor)	S	35		o
ENG_TOWN_NAME	Town name (English Descriptor)	S	30		c
ENG_ADMINISTRATIVE_AREA	Highway authority name (English Descriptor)	S	30		m
CYM_STREET_DESCRIPTOR	Name, description or street number (Welsh Descriptor)	S	100		c
CYM_LOCALITY_NAME	Locality name (Welsh Descriptor)	S	35		c
CYM_TOWN_NAME	Town name (Welsh Descriptor)	S	30		c
CYM_ADMINISTRATIVE_AREA	Highway authority name (Welsh Descriptor)	S	30		c
SWA_ORG_REF_NAMING	A code to identify the street naming authority or the highway authority if numbered	I	4	DfT data capture code	m
VERSION	A sequential number indicating the version of the record (no longer used)	I	4	1	m
LAST_UPDATE_DATE	The date on which the record was entered or a new version created	D	10	1990-01-01 to present year + 1 year	m
STREET_END_DATE	The date on which the street was closed or one or more new USRNs replaced the record	D	10		o
STREET_START_X	The X co-ordinate (easting) of the start point of the street	I	7	80000-656100	m
STREET_START_Y	The Y co-ordinate (northing) of the start point of the street	I	7	5000-657700	m
STEET_END_X	The X co-ordinate (easting) of the end point of the street	I	7	80000-656100	m
STREET_END_Y	The Y co-ordinate (northing) of the end point of the street	I	7	5000-657700	m
STREET_TOLERANCE	The tolerance of the start and end co-ordinates	I	3	0-999	m

Only the most recent version of a USRN will be supplied.

Both Welsh and English language street descriptors will be supplied for all streets by Welsh Highway Authorities. Welsh language street descriptors will not be supplied by English Highway Authorities. Please see DTF 7.1 for further guidance.

Town Name must be supplied with each relevant descriptor for all street records of type 1 and 2. It is optional for other street record types but must be present if the locality field is present.

10.5.8STREET_XREF record

The NSG standard allows the use of cross-references between street records. The transfer format allows cross-references to be supplied by use of the STREET_XREF record (12). Cross-references are used in two ways:

1. To identify where there are overlaps between streets (XREF_TYPE = 1 in the STREET_XREF record).

2. To identify the ESUs that make up a Street (XREF_TYPE = 2 in the STREET_XREF record).

The use of cross-reference records reflects the level of the street(s) that are being cross-referenced.

If the gazetteer is 'pure' level 2 or 3 (i.e. there are ESU records for every street), then all cross-references should be to ESUs (XREF_TYPE = 2). No street cross-references (XREF_TYPE 1 = 1) should be present as such cross-references can be inferred from the ESU cross-references on data import.

Where XREF_TYPE = 1 the first USRN must be a Type 1 or 2 street and the second USRN must be a Type 3 or 4.

The use of both types of cross-reference in the transfer file could lead to the duplication of information about cross-referencing and data integrity problems. In order to ensure a consistent and logical approach to the use of cross-references the above rules should be followed when producing NSG CSV data.

Field	Description	Type	Len	Value range	Obl.
RECORD_IDENTIFIER	Identifies the record as a STREET_XREF record	I	2	12	m
XREF_TYPE	Identifies the type of record that is being cross-referenced	I	1	1 or 2	m
USRN	Unique street reference number	I	8		m
USRN_VERSION_NUMBER	A sequential number indicating the version of the street for which the cross-reference applies. (No longer used)	I	4	1	m
XREF_ID	Cross-references to other representations of the street or the ESUs of the Street	I	14	A valid USRN (XREF_TYPE = 1) or a ESUID (XREF_TYPE = 2)	m
XREF_VERSION_NUMBER	A sequential number indicating the version of the street that is being cross referenced. (No longer used)	I	4	1	m

Example: **12, 1, 12345678, 5, 23456789, 3**

Note: The appropriate version of the cross-referenced entity must exist in the file, i.e. cross references may only reference the latest version of a USRN / ESU.

10.5.9ELEMENTARY_STREET_UNIT record

ESU records are compulsory for level 2 and 3 street gazetteers. However, there may be some level 1 streets in a level 2 or 3 gazetteer for which there are no ESU records. ESU records will not be present in level 1 street gazetteers.

Field	Description	Type	Len	Value range	Obl.
RECORD_IDENTIFIER	Identifies the record as an ELEMENTARY_STREET_ UNIT record	I	2	13	m
ESUID	The unique ESU identifier, generally derived from the mid-point NGR of the ESU (concatenated 7-digit X and Y with leading zeros)	I	14		m
ESU_VERSION_NUMBER	A sequential number indicating the version of the record (no longer used)	I	4	1	m
ESU_LAST_UPDATE_DATE	The date on which the record was entered or a new version created	D	10	1990-01-01 to present date + 1 year	m
ESU_END_DATE	The date on which the street was closed or one or more new ESUs replaced the record	D	10		o
NUM_COORD	The total number of co-ordinate pairs that defines the street's geometry. This number includes the start and end co-ordinates held in the ESU record and any additional ESU_COORDS records	I	5	1-99999	m
ESU_START_X	The X co-ordinate (easting) of the start point of the ESU	I	7	80000-656100	m
ESU_START_Y	The Y co-ordinate (northing) of the start point of the ESU	I	7	5000-657700	m
ESU_END_X	The X co-ordinate (easting) of the end point of the ESU	I	7	80000-656100	m
ESU_END_Y	The Y co-ordinate (northing) of the end point of the ESU	I	7	5000-657700	m
ESU_TOLERANCE	The tolerance of the start and end co-ordinates in metres	I	3	0-999	m

Note: Only the most recent version of an ESU must be supplied.

10.5.10ESU_COORDS record

The ESU_COORDS record is used to transfer individual, intermediate co-ordinate pairs for an ESU. As such, the start and end co-ordinates for the ESU are not defined by an ESU_COORDS record, as they are already defined in the ESU record.

Field	Description	Type	Len	Value range	Obl.
RECORD_IDENTIFIER	Identifies the record as an ELEMENTARY_STREET_ COORDINATE record	I	2	14	m
ESUID	The unique ESU identifier	I	14		m
ESU_VERSION_NUMBER	A sequential number indicating the version of the ESU which the co-ordinates refer to (no longer used)	I	4	1	m
COORD_NUMBER	Sequential counter of the co-ordinates for an ESU, starting at 2. Indicator as to the order of the co-ordinates for an ESU	I	5	2-99999	m
ESU_X_COORD	The X co-ordinate (easting) of an intermediate point on the ESU	I	7	80000-656100	m
ESU_Y_COORD	The Y co-ordinate (northing) of an intermediate point on the ESU	I	7	5000-657700	m

Example: 14, 12345678765432, 2, 1234568, 8765433

Note: Coordinates must only be supplied for ESU versions present in the file, i.e. the most recent version.

10.5.11ADDITIONAL _STREET record

The ADDITIONAL_STREET record is used to supply additional street attribute data for the NSG. This information is only supplied for type 1 and type 2 streets (i.e. designated street names and street descriptions).

There should be at least one ADDITIONAL_STREET (type 21) record for every STREET (type 11) record.

Multiple type 21 records should be created against a single street (with a single USRN) where:

1. Other authorities have an interest in that street, or

2. The street has separate parts, each having a different primary notice authority, or a different Operational District within a primary notice authority, or a different road status.

Where other authorities have an interest in a street there must be one type 21 record for the street with the INTEREST_TYPE set to “Primary notice authority”, and additional records as required for other interests.

The INTEREST_TYPE should be set to “All notifications” when an organisation has an interest in a street but is not the highway authority for that street, e.g. a neighbouring street authority, and wishes to receive notification details for all works.

The INTEREST_TYPE should be set to “Restrictions and licences” when an organisation has an interest in a street but only wishes to receive details of restriction notices or proposed street works licences on that street.

If an authority has an interest in only part of the street then the WHOLE_STREET flag should be set to indicate this, and a detailed description of the extent should be included within the ADDITIONAL_STREET_LOCATION_TEXT field.

Field	Description	Type	Len	Value	Obl.
RECORD_IDENTIFIER	Identifies the record as an ADDITIONAL_STREET record	I	2	21	m
USRN		I	8		m
ADDITIONAL_STREET_ SEQ_NUMBER	Sequential number for each additional street information record for a particular street	I	3		m
SWA_ORG_REF_AUTHORITY	Code for the authority that has an interest in the street	I	4	See DfT code	m
WHOLE_STREET	Flag to indicate whether additional street information applies to the whole street	I	1	0 Partial street 1 Whole street	m
ADDITIONAL_STREET_ LOCATION_TEXT	Description of the parts of the street for which the record is applicable	S	120		c
DISTRICT_REF_AUTHORITY	The code for the Operational District within the authority	I	3	1-999	m
SWA_ORG_REF_ MAINTAINING_DATA	The code for the organisation responsible for maintaining the street data	I	4	See DfT code	o
DISTRICT_REF_	The code for the	I	3	1-999	o

Field	Description	Type	Len	Value	Obl.
MAINTAINING_DATA	Operational District within the maintaining authority responsible for maintaining the street data				
STREET_ADOPTION_CODE	Road status	I	2	1 Publicly maintainable 2 Prospectively maintainable 3 Neither 1 or 2	c
INTEREST_TYPE	Indicates the type of interest the organisation has in the street	I	1	1 Primary notice authority 8 All notifications 9 Restrictions and licences	m
START_X	The X co-ordinate (easting) of the start point	I	7	80000-656100	c
START_Y	The Y co-ordinate (northing) of the start point	I	7	5000-657700	c
END_X	The X co-ordinate (easting) of the end point	I	7	80000-656100	c
END_Y	The Y co-ordinate (northing) of the end point	I	7	5000-657700	c

The STREET_ADOPTION_CODE will always be supplied where the INTEREST_TYPE is 1 and will not be supplied for other INTEREST_TYPE values.

Note that in addition to sending electronic notifications to the Primary Notice Authority, promoters must still fulfil their regulatory obligations with regard to notifying Street Managers for work on private streets (STREET_ADOPTION_CODE 2 or 3).

Values for ADDITIONAL_STREET_LOCATION_TEXT, START_X, START_Y, END_X and END_Y are mandatory if WHOLE_STREET value = 0, i.e. the record relates to only part of the street.

If the WHOLE_STREET = 1 the ADDITIONAL_STREET_LOCATION_TEXT and coords must not contain any values.

10.5.12REINSTATEMENT_DESIGNATION record

The Reinstatement Designation record is used to define reinstatement categories for a street. There may be one or more such categories for a particular street (single USRN). There should be at least one Reinstatement Designation record for every type 1 or type 2 Street (type 11) record.

Field	Description	Type	Len	Value	Obl
RECORD_IDENTIFIER	Identifies the record as a REINSTATEMENT_ DESIGNATION record	I	2	22	m
USRN	Unique street reference number	I	8		m
STREET_REINSTATEMENT_ TYPE_SEQ_NUM	Sequential number for each reinstatement type for each street	I	3		m
STREET_REINSTATEMENT_ TYPE_SEQ_CODE	Reinstatement type code	I	2	1 Carriageway type 1 (10 – 30 MSA) 2 Carriageway type 2 (2.5 -10 MSA) 3 Carriageway type 3 (0.5 – 2.5 MSA) 4 Carriageway type 4 (up to 0.5 MSA) 5 Carriageway type 0 (30 - 125 MSA) 6 High duty footway 7 High amenity footway 8 Other footways 9 Private street (no designation info. held by street authority) 10 Carriageway type 6 (over 125 MSA)	m
WHOLE_STREET	Flag to indicate whether the reinstatement category applies to the whole road or part of the street	I	1	0 Part of street 1 Whole street	m
REINSTATEMENT_ LOCATION_TEXT	Description of the location of the part(s) of the street for which this reinstatement type is applicable	S	250		c
REINSTATEMENT_START_X	The X co-ordinate (easting) of the start point of the reinstatement designation	I	7	80000-656100	c
REINSTATEMENT_START_Y	The Y co-ordinate (northing) of the start point of the reinstatement designation	I	7	5000-657700	c
REINSTATEMENT_END_X	The X co-ordinate (easting) of the end point of the reinstatement designation	I	7	80000-656100	c
REINSTATEMENT_END_Y	The Y co-ordinate (northing) of the end point of the reinstatement designation	I	7	5000-657700	c

Values for REINSTATEMENT_LOCATION_TEXT and REINSTATEMENT X/Y are mandatory if WHOLE_STREET = 0.

If the same reinstatement designation applies to the whole street then the WHOLE_STREET flag must be set and there must be only one record for the street.

If the WHOLE_STREET = 1 the REINSTATEMENT_LOCATION_TEXT and reinstatement coords must not contain any values.

Where multiple designations exist on a single street, then multiple type 22 records should be created, each with WHOLE_STREET value = 0 and values for REINSTATEMENT_LOCATION_TEXT and REINSTATEMENT X/Y co-ordinates provided that clearly define the applicable area for each specific reinstatement category.

10.5.13SPECIAL_DESIGNATION record

This record is used to define special designations that apply to a street.

There may be none, one or more than one designations for a particular street (single USRN).

Field	Description	Type	Len	Value range	Obl.
RECORD_IDENTIFIER	Identifies the record as a SPECIAL_DESIGNATION record	I	2	23	m
USRN	Unique street reference number	I	8		m
STREET_SPECIAL_DESIG_ NUM	Sequential number for each street for each type of special designation.	I	3		m
STREET_SPECIAL_DESIG_ CODE	A code for the type of designation	I	2	1 Protected street 2 Traffic sensitive 3 Special engineering difficulty (SED) 4 Street designations do not apply to works 5 Not used 6 Proposed SED 7 Not used 8 Level crossing safety zone 9 Environmentally sensitive areas 10 Structures (not SED) 11 Special surfaces 12 Pipelines 13 Priority lanes 14 Special construction needs 15 Section 85 16 Strategic route 17 Streets subject to early notification of immediate activities 18 Special events 19 Parking bays and restrictions 20 Pedestrian crossings and traffic signals 21 Speed limits 22 Transport authority critical apparatus	m
WHOLE_STREET	Flag to indicate whether the reinstatement category applies to the whole road or part of the road	I	1	0 Part of street 1 Whole street	m
SPECIAL_DESIG_ PERIODICITY_CODE	Code describing the periodicity of the restriction	I	2	1 Every day 2 Working days only 3 Weekends and public holidays only 4 Weekly 5 Monthly 6 Annually 7 Monday only 8 Tuesday only 9 Wednesday only 10 Thursday only 11 Friday only	m

Field	Description	Type	Len	Value range	Obl.
				12 Saturday only 13 Sunday only	
SPECIAL_DESIG_LOCATION_ TEXT	Description of the location of the part of the street for which this special designation type is applicable	S	120		c
SPECIAL_DESIG_START_X	The X co-ordinate (easting) of the start point of the special designation	I	7	80000-656100	c
SPECIAL_DESIG_START_Y	The Y co-ordinate (northing) of the start point of the special designation	I	7	5000-657700	c
SPECIAL_DESIG_END_X	The X co-ordinate N(easting) of the end point of the special designation	I	7	80000-656100	c
SPECIAL_DESIG_END_Y	The Y co-ordinate (northing) of the end point of the special designation	I	7	5000-657700	c
SPECIAL_DESIG_START_ DATE	Date on which the special designation comes into force, if seasonal	D	10		o
SPECIAL_DESIG_END_DATE	Date on which the special designation ceases to be in force, if seasonal	D	10		o
SPECIAL_DESIG_START_ TIME	Time at which the special designation comes into force, where applicable	T	5		o
SPECIAL_DESIG_END_TIME	Time at which the special designation ceases to be in force, where applicable	T	5		o
SPECIAL_DESIG_ DESCRIPTION	Additional information for certain designations	S	120		o
SWA_ORG_REF_ CONSULTANT	A code for the street authority that must be consulted regarding the special designation	I	4	See DfT codes	o
DISTRIC_REF_CONSULTANT	A code for the operational district within the authority that must be consulted regarding the special designation	I	3	1-999	o

Values for SPECIAL_DESIG_LOCATION_TEXT and SPECIAL_DESIG_START X/Y and SPECIAL_DESIG_END X/Y are mandatory if WHOLE_STREET = 0.

If the WHOLE_STREET = 1 the SPECIAL_DESIG_LOCATION_TEXT and special desig coords must not contain any values.

10.6OD File Definition

OD data should be submitted as XML files. The root element of this XML is <OrganisationDistrictAOInotice>, with the remaining structure as defined in section 5.2.23. For example:

```
<OrganisationDistrictAOInotice SchemaVersion="5.0" xmlns="http://www.wrcplc.co.uk/Schemas/ETON"
                xmlns:p1="http://www.govtalk.gov.uk/people/bs7666"
                xmlns:p2="http://www.govtalk.gov.uk/financial/FinancialIdentifiers"
```

```
                xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
                xsi:schemaLocation="http://www.wrcplc.co.uk/Schemas/ETON EToNorganisation-v5-0.xsd">
        <Organisation>
                <OrganisationName>Commons Borough Council</OrganisationName>
                <OrganisationID>1234</OrganisationID>
                <OrganisationPrefix>AB</OrganisationPrefix>
                <District>
                        <DistrictName>etc... </DistrictName>
                        ....
                </District>
        </Organisation>
</OrganisationDistrictAOInotice>
```