



# Boundary-Line - User Guide

## Version History

Version	Date	Description	Authors
2.0	17/07/2019	Updated content	Andrew McClune

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## Contact Details

Physical address: **Customer Service Centre, Ordnance Survey, Adanac Drive, Southampton, SO16 0AS**

Telephone	+44 (0)3456 05 05 05
Welsh Language Helpline	+44 (0)3456 05 05 04
Textphone (deaf and hard of hearing users only please)	+44 (0)2380 05 61 46
Email: <a href="mailto:customerservices@os.uk">customerservices@os.uk</a>	
Web: <a href="http://www.os.uk">www.os.uk</a>	

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# 1. Introduction

This user guide is an introduction to Boundary-Line and offers guidance and advice on how to deliver the maximum value from the product.

## Resources

The following documents are associated with Boundary-Line:

1. **Boundary-Line – User Guide**
2. Boundary-Line - Technical Specification

## Target Audience

This document is intended for:

- Users who are comfortable applying technical knowledge.
- Users who wish to know more detail about the Boundary-Line within a GIS.

## Glossary

Please refer to [Annexe D: Glossary](#) as you work through this document.

## Feedback

Ordnance Survey welcomes all feedback. If you have any comments or require further information, please make contact using the [details](#) above or via our [website](#).

## 2. About Boundary-Line

Boundary-Line provides a representation of the hierarchy of administrative and electoral boundaries and their names for England, Scotland and Wales.

Boundary-Line for England and Wales was initially digitised from Ordnance Survey's boundary record sheets at 1:10 000 scale (or, in some cases, at larger scales).

The Government Statistical Service (GSS) codes are supplied by the Office of National Statistics (ONS) and General Registers of Scotland (GROS).

Appropriate software is needed to use the data for your intended application.

### 2.1 Boundary-Line benefits

The high specification of Boundary-Line offers you the following benefits:

- Full coverage of Great Britain, supplied as England, Scotland and Wales.
- The key boundary dataset for Great Britain, suited to multiple applications using a GIS and other digital mapping systems.
- The full hierarchy of boundaries.
- Structured vector format, offering great functionality.
- [GSS codes](#), where available, allow you to link Boundary-Line polygons with GSS information.
- Area values for every polygon.
- Mean high water (springs) mark enables you to build and explicitly identify dry land areas within coastal polygons.
- Documented updates via bi-annual releases allow you to easily identify relevant changes.
- Unique administrative area identifiers are retained at each update, allowing revised boundaries to be related to your existing data.

### 2.2 Boundary-Line applications

Boundary-Line can be used for GIS analysis to support a wide range of business decision-making such as:

- Political analysis
- Environmental analysis
- Statistical analysis for social or marketing decision-making
- Geo-demographic analysis
- Asset management
- Planning applications

- Legal work
- Reference and research
- Customised graphic output.

## 2.3 Requirements to utilise Boundary-Line

### Transfer formats

Boundary-Line is created in:

- Esri Shapefile
- MapInfo Tab file
- GeoPackage
- GML

### Media

Boundary-Line is supplied as online download and DVD.

### Update

Boundary-Line is now updated twice a year, spring and autumn, allowing a choice in which update is preferred.

The spring update represents boundaries (as defined and modified by Orders, Acts and Statutory Instruments) at the date of the May local elections.

The autumn update also represents boundaries at the date of the May local elections and is operative from the previous spring/May to autumn/October release.

Unlike changes to other boundaries, changes to Westminster constituency (parliamentary) boundaries do not come into operation on a defined date (see [effective date](#) and [operative dates](#)) and it is therefore difficult to timetable such changes into the spring or autumn updates. Therefore, any forthcoming Westminster constituency (parliamentary) boundary changes that have been approved by Government will be supplied as a separate file (in MapInfo or Esri formats only) as part of the updates until they are included in the product.

## 3. Overview of Boundary-Line

### 3.1 Data overview

#### Basic principles

Boundary-Line is the key dataset of administrative and voting boundaries in Great Britain. It is a representation in computer-readable form of a specialist large-scale map, including real-world objects, which may be tangible (such as the [mean high water](#) mark) or intangible (such as a district boundary).

GIS software provides the functionality to store, manage and manipulate this digital map data. The properties of the data make it suitable as a key base for users wishing to develop applications. Boundary-Line is also suitable for use within other digital mapping systems. It's coordinated on the [National Grid](#), which allows for the easy superimposition of other datasets.

Polygons are continuous areas defined by sets of bounding closed lines. They are representational of areas, such as electoral wards, and have relationships to administration collection features in order to convey descriptive characteristics of the polygon. These are explicit within the data and can be viewed and manipulated with appropriate software.

#### Boundary-Line data source

Boundary-Line is currently updated by mapping against OS VectorMap Local (1:10 000 scale) and in certain cases, large-scale sources.

### 3.2 Boundary-Line features

A list of the features within Boundary-Line includes:

- Civil parish (England) and community (Wales)
- County
- District
- Electoral division (county and unitary)
- European electoral region
- Greater London Authority
- Greater London Authority Assembly constituencies (the London proportional representation voting areas)
- London borough (including the county of the City of London)
- Metropolitan district.
- Scottish parliamentary constituency and electoral region.
- Unitary authority.

- Ward (district, unitary, metropolitan and London borough).
- Welsh Assembly constituency and electoral region.
- Westminster (parliamentary) constituency.
- [Extent Of The Realm](#) (EOR) – either [mean low water](#) mark (England and Wales), [mean low water springs mark](#) (Scotland) or seaward boundary extensions.
- [Mean High Water Mark](#) (England and Wales) and/or [mean high water springs mark](#) (Scotland) (both are abbreviated to MHW in this user guide).
- Distinctive names.
- GSS codes in England, Wales and Scotland for all units with exception of Greater London Authority, county electoral divisions and non-civil-parish areas.
- Area measurements.
- Unique administrative unit, link and polygon identifiers.
- Annual updates of the dataset.

### 3.3 Boundary-Line files and sub-levels

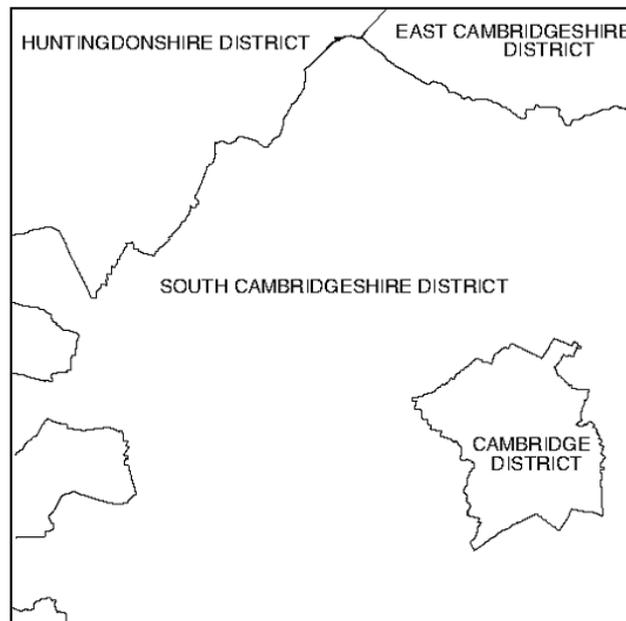
The data is supplied as named files. The named files include all the other relevant sub-levels of electoral boundaries that belong under that high-level administration; these are:

Named file type	Possible sub-level of boundaries within the named file
County	The named county, district, district ward, civil parish, county electoral division (ED).
Unitary authority	The named unitary authority, unitary authority ward or unitary authority ED as appropriate, civil parish where appropriate, together with community in Wales.
Metropolitan district	The named metropolitan district, metropolitan district ward, civil parish where appropriate.
Greater London Authority	The Greater London Authority, Greater London Authority Assembly constituency, London borough, London borough ward.
Scottish parliamentary electoral region	The named Scottish parliamentary electoral region, Scottish parliamentary constituency.
Welsh Assembly electoral region	The named Welsh Assembly electoral region, Welsh Assembly constituency.
Westminster constituency	The named Westminster constituency.
European region	The named European region.

Because of the named file supply, all coordinates in the supplied data file are full Ordnance Survey National Grid coordinates, as there is no concept of local origin.

### 3.3.1 Complex polygons

Complex polygons are polygons that wholly enclose other polygons. They only occur when an administrative unit wholly encloses one or more others at the same level, for example, a rural district surrounding an urban district.



**Figure 1:** A complex polygon – Cambridge District surrounded by South Cambridgeshire District

### 3.3.2 Feature information

Boundary-Line has three feature classes:

- Administrative units with attributes
- Polygon features with attributes
- Polyline features with attributes

Each feature has the following component:

- Feature attribute data

Each geometric feature has an additional component:

- Feature position

### 3.3.3 Feature position

The geometry of map features is defined in terms of coordinates. All coordinates used in Boundary-Line are based on the Ordnance Survey [National Grid](#) (NG) coordinate referencing system and are quoted to a 0.1 m resolution. Despite this, Boundary-Line data can be no more accurate than its source, primarily the generalised 1:10 000 scale mapping.

There will be positional differences between the boundaries in Boundary-Line and Ordnance Survey large-scale topographic products. This is due to the large-scale products being surveyed to a higher degree of accuracy and associated to ground surface features, at scales such as 1:1250 and 1:2500.

Boundary-Line has been created as a more generalised set of administrative and electoral boundaries for the whole of Great Britain. It has been digitised against Ordnance Survey (generalised) 1:10 000 scale OS VectorMap Local mapping. The process of generalising for 1:10 000 scale mapping may have caused certain features to be moved from their true ground position for the purposes of map clarity. The result being that Boundary-Line and large-scale boundaries will not always be coincident.

### 3.3.4 Feature attribute data

An attribute is the descriptive characteristic of a feature, that is, a non-spatial element. In Ordnance Survey map data terms, an attribute can be a feature type (these are character codes), or a distinctive name, number or code, for example, *Bassett Ward* or *145.232 hectares*.

### 3.3.5 Area codes

Each administrative unit is classified by means of an area code (AC). These area codes are allocated when each feature is initially interpreted and captured from source. This means that a county is distinguished from a ward by the area code allocated to it. The polygon features can be classified by tracing their relationships to administrative units. Consequently, links can be classified by tracing their relationships to polygons.

### 3.3.6 Other attributes

It is possible, with appropriate software, for you to add other names or values of your own choice as attributes of features.

### 3.3.7 Unique identifiers for link and polygon

There are two identifiers in Boundary-Line that help you identify features, and which are provided to create consistent references between successive releases of Boundary-Line data. They are unique within each feature type throughout the whole dataset and maintained through successive annual updates. These identifiers are never modified – only created or deleted. If a feature is deleted from the Boundary-Line database, then the identifier ceases to exist.

These are the two attributes: LINK\_ID and POLYGON\_ID.

### 3.3.8 Text

There is no direct cartographic text in Boundary-Line. Names, area values and GSS codes are held as attributes.

## 4. Boundary-Line explained

### 4.1 Relationships of administrative areas

The Boundary-Line product supplies the administrative area relationships.

A district is a division of a county; a civil parish is a division of a district. A county is divided for voting purposes into electoral divisions (EDs) and a district is divided for voting purposes into district wards.

#### **Unitary authorities**

With the introduction of unitary authorities, there are now two- and three-tier local government hierarchies. The three-tier system remains unchanged. The two-tier system has unitary authorities replacing the county and district levels of administration.

Unitary authorities may be divided into civil parishes or communities (except in Scotland), and unitary authority wards or unitary authority EDs for voting purposes. In Wales, the voting area is the unitary authority ED; in Scotland it is the unitary authority ward and in England it is the unitary authority ward or unitary authority ED.

#### **Metropolitan districts**

England also has metropolitan districts; these have no county administration. These districts are divided for voting purposes into metropolitan district wards.

#### **Greater London Authority & London borough**

With the introduction of the regional government for London, in this document called the Greater London Authority, the proportional representation voting area for this new administration is the Greater London Authority Assembly constituency. The existing London borough structure also has a relationship with the new Greater London Authority and each London borough is divided for voting purposes into London borough wards.

#### **Scottish Parliamentary constituency and electoral regions**

Scotland is divided into parliamentary constituencies for voting purposes; to elect Members of the Scottish Parliament (MSPs). The Scottish parliamentary electoral region is a grouping of Scottish parliamentary constituencies.

#### **Welsh Assembly constituency and electoral regions**

Wales is divided into assembly constituencies for voting purposes; to elect assembly members (AMs) to the Welsh Assembly. The Welsh Assembly electoral region is a grouping of Welsh Assembly constituencies.

#### **European electoral regions**

Great Britain is divided into European regions (Scotland, Wales and nine English regions) for voting purposes; to elect members (MEPs) to the European Parliament.

## Westminster (parliamentary) constituency

England, Scotland and Wales are divided into parliamentary constituencies for voting purposes to elect members (MPs) to the Westminster Parliament. Parliamentary constituencies are made up of combinations of wards (or electoral divisions in Wales).

Boundary-Line data is output in one structure:

- Layered

This is a simplified file structure supplying the boundaries as individual files; for example, the county file contains only counties, and the unitary authorities file contains only unitary authorities.

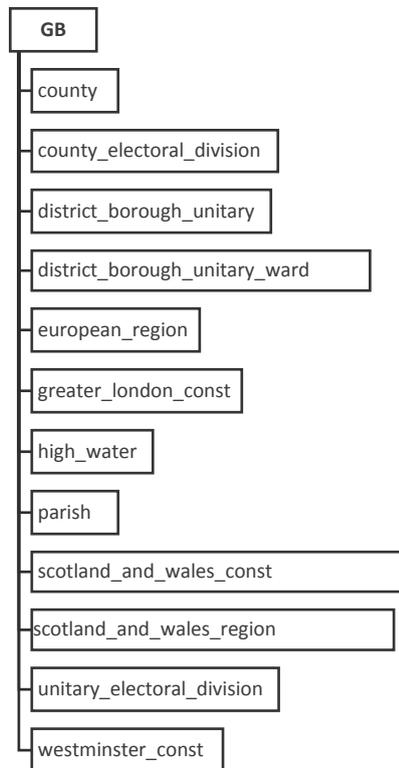


Figure 2a: An example of the GB directory and layered files

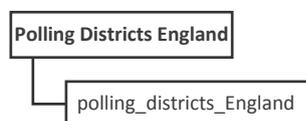


Figure 2b: An example of the Polling Districts England directory and layered files

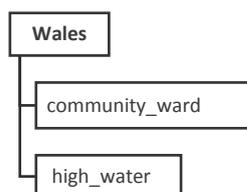


Figure 2c: An example of the Wales directory and layered files

*NOTE: Ceremonial and Historical counties are provided in separate directories called Supplementary\_Ceremonial and Supplementary\_Historical respectively*

## 4.2 Boundary-Line principles and features

This section explains the representation of features in Boundary-Line and describes various definitions and exceptions.

### 4.2.1 Administrative area

This term is used by Ordnance Survey to refer to all public administrative areas. For the Boundary-Line dataset, the following are included under this term:

- **In England**
  - County
  - Unitary authority
  - Metropolitan district
  - District
  - Civil parish (*NOTE: depicted if appropriate notification has been received. Not all parishes have councils*)
  - European electoral region
  - Parliamentary (Westminster) constituency
  - Electoral division (of county or unitary authority)
  - Ward (of district, metropolitan district, London borough, unitary authority)
  - London borough (including the county of the City of London)
  - Greater London Authority
  - Greater London Authority Assembly constituency
- **In Wales**
  - Unitary authority
  - Community (*NOTE: depicted if appropriate notification has been received*)
  - European electoral region
  - Parliamentary (Westminster) constituency

- Electoral division (of unitary authority)
- Welsh Assembly constituency
- Welsh Assembly electoral region
- **In Scotland**
  - Unitary authority
  - European electoral region
  - Parliamentary (Westminster) constituency
  - Ward (of unitary authority)
  - Scottish parliamentary constituency
  - Scottish Parliament electoral region

#### 4.2.2 Area values

Area values exist for every polygon in Boundary-Line; area values are quoted to the current Department for Communities and Local Government (DCLG) specification of 0.001 hectare. The value is subject to the inherited accuracies of the generalised 1:10 000 scale published mapping used as the source for Boundary-Line.

#### 4.2.3 Boundary

A boundary is the limit of a preset and established area whose limit is determined by one or more lines. For example, in Boundary-Line, an administrative unit boundary is represented by a county area boundary.

#### 4.2.4 Ceremonial counties

A ceremonial county is an area that has an appointed Lord Lieutenant and High Sheriff. Ceremonial counties are not explicitly represented in Boundary-Line.

#### 4.2.5 Detached parts

The description 'Detached, (Det)', only applies to portions of local government or parliamentary constituency areas which are separated from the main area, being completely surrounded by other local government or parliamentary constituency areas and not connected by direct access on the ground.

The description will not be applied to islands or parts of islands in the sea.

Detached parts have the same GSS code (where applicable) as the main area.

## 4.2.6 Divorcement

Part of a boundary separated from another, originally on the same alignment. Divorcements are created by the revision of one boundary and not the other.



Figure 3: Divorced boundaries

Figure 3 shows a boundary divorcement. The unitary boundary between Vale of Glamorgan and Cardiff has been realigned, whilst the parliamentary (Westminster) constituency boundary has remained in its original position. It is likely that the parliamentary (Westminster) constituency boundary will also be realigned at some time in the future.

## 4.2.7 Effective date

These are the dates on which an Act, Order or Statutory Instruments are 'effective'. They may or may not be the same as the operative date or the appointed day or days. The term is particularly applied to parliamentary (Westminster) constituency changes that are effective at the date of the next general election after the operation of the order making change. This is the 'effective' date, that is, the date of the proclamation dissolving an existing Parliament and calling a new Parliament.

## 4.2.8 Exception areas

The following are specific exceptions to the normal rules:

Greater London and the metropolitan counties:

- Greater London covers the area of the 32 London boroughs plus the City and county of the City of London.
- Greater London is no longer a county. The Greater London Authority, which has no authority over the autonomous London boroughs, is held as one named file with all the sub-levels of boundary within it.

- The London boroughs and the City and county of the City of London have been classified as London boroughs.

The metropolitan districts within the former metropolitan counties (disbanded in 1985) are classified as metropolitan districts:

- Greater Manchester
- Merseyside
- South Yorkshire
- West Yorkshire
- Tyne and Wear
- West Midlands

For further detail refer to [Annexe C: Exception Areas](#).

#### 4.2.9 Government Office Regions (GORs)

Government Office Regions are *not* represented as specific boundary features in Boundary-Line; however, the boundaries that are used to define the GORs are represented as **European regions**. A full list of the counties and unitary authorities that represent each European region which the GORs are based on are listed at [Annexe B: Metadata](#).

Additional GOR information can be found at [www.statistics.gov.uk/official](http://www.statistics.gov.uk/official). This will identify the GORs defined by the Office for National Statistics, which only covers England. We have also included Scotland and Wales European Regions to complement the product's GB coverage.

*NOTE: The Government Office Network closed on 31 March 2011.*

#### 4.2.10 Honorary titles

Honorary titles granted to local government areas such as city and town are not included in Boundary-Line.

Boroughs in England have been identified, as from the October 2006 release, with (B) in the file name and (B) in the Name attribute, for example;

*CITY\_OF\_SOUTHAMPTON (B)* = File name

*CITY OF SOUTHAMPTON (B)* = NAME attribute

The borough (B) will only be depicted on unitary authorities, district and metropolitan districts. This addition is to purely denote which boundaries have borough status in England without creating polygons or altering the specification in any way.

#### 4.2.11 National boundaries

The boundaries between England and Wales and England and Scotland are treated as county boundaries in Boundary-Line, which have been created from the local authority boundaries.

#### 4.2.12 Government Statistical Service (GSS) codes

These codes are a unique system of referencing for administrative units.

All types of units are coded in Boundary-Line except for Greater London Authority, county electoral divisions and non-civil-parish areas. The County ED code for Greater London Authority is set at 999999999. The code is blank when the administrative unit does not have a code, for example non-civil-parish areas.

The codes are allocated by the Office of National Statistics (ONS) for England and Wales and by the General Register Office for Scotland (GROS) for Scottish areas.

#### 4.2.13 Operative dates

This is a calendar date, given in an Order, Act or Statutory Instrument, on which the specified boundary changes will come into operation. Dates given may be up to four years after the publication of the Order, Act or Statutory Instrument and may apply to any type of boundary other than parliamentary or European regions.

*The Westminster (parliamentary) constituency boundaries have an [Effective date](#), rather than an Operative Date 'The Effective Date will be the date of a general election, meaning any changes to these boundaries will apply as and from the date of the next election.'*

#### 4.2.14 Order, Act or Statutory Instrument

A document signed by the relevant Secretary of State or a local authority letter describing and giving legal authority for boundary changes. Other Acts and Orders can affect the addition of new boundary information, for example, seaward extensions and harbour acts.

#### 4.2.15 Superseded date

This is the last date on which a boundary was current. Where an effective date applies, the superseded date will be the day before the next dissolution of Parliament, or the day before the next European Assembly election in the United Kingdom.

Boundaries are no longer shown in Boundary-Line if they have been superseded at the time of the annual snapshot of boundaries that each release of Boundary-Line represents.

#### 4.2.16 Survey change

When changes occur to tidelines, rivers or streams caused by natural and gradual forces, any boundaries that are linked to these altered features will move with them. When the movement of a boundary, MHW or EOR alignment in Boundary-Line reflects such changes, this will be noted in the update notes that accompany each release of Boundary-Line.

#### 4.2.17 Unannexed areas

This is an area within the realm that is not included in all the relevant administrative units. The area will remain unannexed until further legislation changes its situation and the polygon represents a hole in that level of administration.

#### 4.2.18 Unitary authorities

Unitary authorities and counties effectively create a contiguous layer of administrative units throughout the whole of Great Britain. They represent single-tier administrations with responsibility for all areas of local government.

### 4.3 The coastline and associated items

#### 4.3.1 Extent of the realm (EOR)

The external bounding line of the Boundary-Line dataset is the extent of the realm. This means the boundary extent is digitised on the alignment of the mean low water (springs)(MLWS) for the seaward extent. Boundary-Line does not contain a separate mean low water (springs) (MLWS), only CODE 0071 representing the mean high water (MHW).

*NOTE: to display the EOR, both MHW and another type of boundary, for example, European electoral region or Westminster constituency, need to be displayed together.*

The *Territorial Waters Jurisdiction Act 1878* and the *Territorial Waters Order in Council 1964* confirm that the extent of the realm of Great Britain as used by Ordnance Survey is properly shown to the limit of mean low water for the time being, except where extended by Parliament.

This means that the extent of realm will be:

- The [mean low water mark](#) (mean low water springs in Scotland) except when landward of a [seaward extension](#) or as shown below in Figure 4a and indicated as [Point B](#).
- The [mean high water mark](#) (mean high water springs in Scotland), where coincident with mean low water or mean low water springs, but not when landward of a seaward extension or Point B.
- Point B.
- Seaward extensions.

In figure 4a, the extent of the realm (EOR) follows mean low water, crossing the estuaries at LWL.

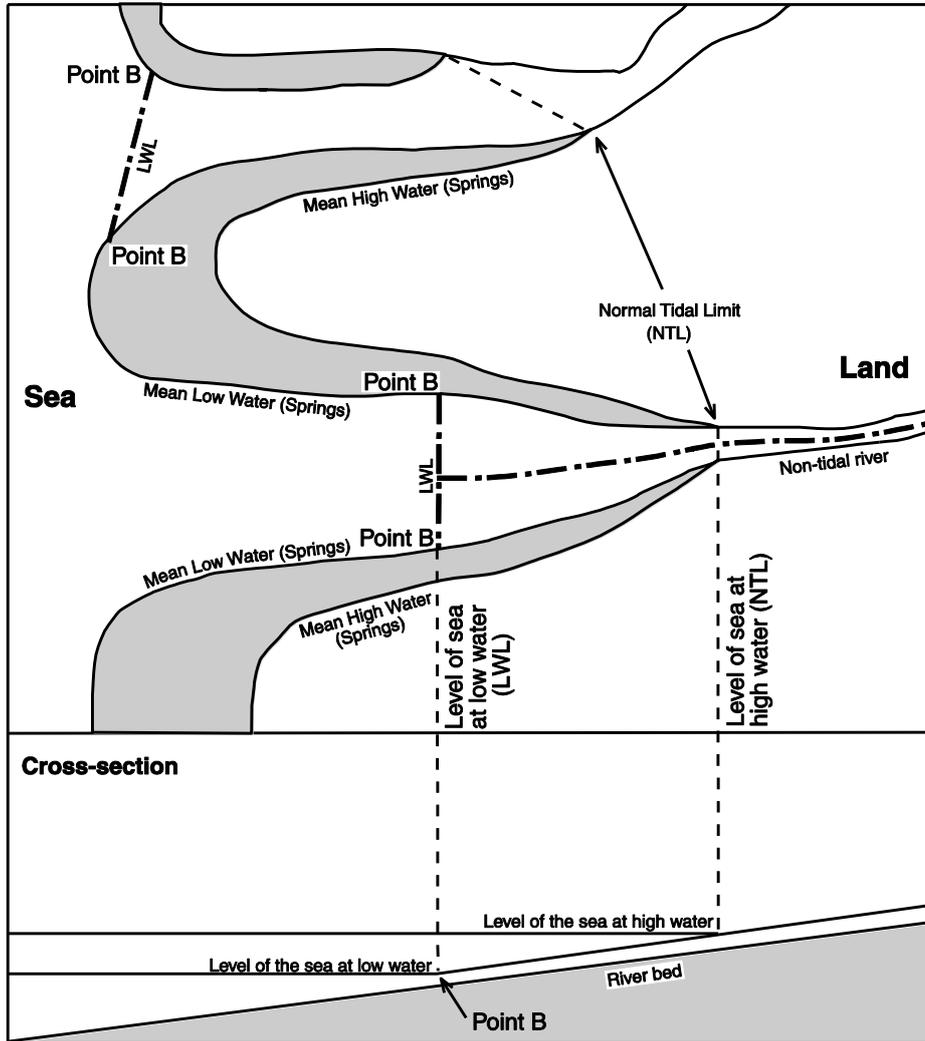


Figure 4a: Treatment of boundaries in estuaries

Figure 4b shows how the features depicted in figure 4a are represented in Boundary-Line.

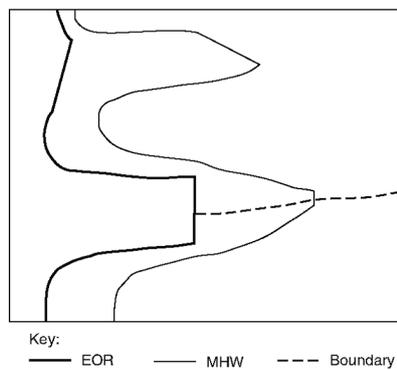


Figure 4b: Treatment of estuaries in Boundary-Line

### 4.3.2 Foreshore

The foreshore is taken to be the area of land between [mean high water \(springs\)](#) mark and the [extent of the realm](#) which will include:

- Tidal water within a [seaward extension](#).
- Tidal water above [Point B](#) (Figure 4a), to the [normal tidal limit](#) (NTL), together with the area between mean high water (springs) mark and the edge of the channel at [mean low water \(springs\)](#).

Mean high water (springs) mark is represented in Boundary-Line by a polyline feature with CODE 0071. Mean low water (springs) mark is not shown, although it is generally coincident with the EOR.

The area of non-inland is referenced within each administrative unit using the NA attribute.

### 4.3.3 Islands and rocks in the sea

The following rules govern the representation in Boundary-Line of offshore islands and rocks in the sea:

- Offshore rocks and islands will be shown if 0.4 hectares or more in area at high tide.
- Offshore islands with buildings will always be shown, irrespective of size.

Offshore islands or rocks will not be shown if they are:

- Beyond the defined extent of the realm, irrespective of size.
- Covered at high tide.

If an offshore island or rock is shown, it will be contained within all the relevant administrative unit collections.

### 4.3.4 Mean high water (springs)

The mean high water (springs) mark is shown to NTL.

Areas of salt marsh, mudflats and so on often have very complicated tide lines. For ease of digitising and to reduce data volumes, mean high water may be generalised in these areas (not Scotland).

Mean high water (springs) mark is represented in Boundary-Line by a polyline feature with CODE 0071.

Mean high water (springs) mark is subject to continuous change but the captured alignment of a tide line is a snapshot on one day. It is not practical to revise tide lines very frequently.

### 4.3.5 Mean low water (springs)

Mean low water (springs) mark is shown as the extent of the realm, except when contained within a seaward extension, when it is then omitted.

Banks of sand, mud, shingle or rock separated from the main line of mean low water (springs), and covered at high tide, are not shown. When there are large areas of these banks separated from the main foreshore by narrow channels, the channels are ignored and the whole bounded by mean low water (springs).

The extension of the line of mean low water (springs) into a channel above [Point B](#) becomes edge of channel and is not shown.

Mean low water (springs) mark, and hence [EOR](#) is subject to continuous change but the captured alignment of a tide line is a snapshot on one day. It is not practical to revise tide lines very frequently.

### 4.3.6 Normal tidal limit (NTL)

The point at which the level of a river or stream ceases to be affected by the tidal flow. This point is often an artificial barrier such as a lock or weir.

### 4.3.7 Pier

A pier under which water flows is not normally considered to be within the realm. There are some cases, however, where a structure has specifically been included within the realm by act or order, in which case mean high water (springs) mark and EOR is shown around the limits of the structure.

### 4.3.8 Point B

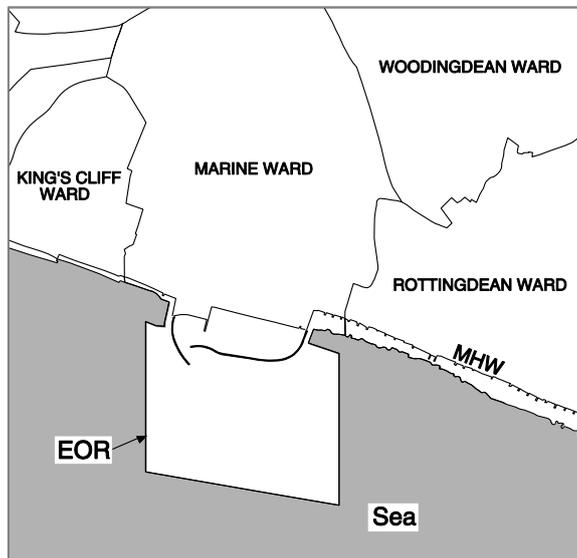
This is the intangible line across a channel where the level of the river meets the level of the sea at low water.

Within large channels or estuaries Point B is defined on the source documents for Boundary-Line and is therefore shown as [EOR](#).

In small channels, Point B is not shown on the source documents, so is assumed to be along the general line of low water and is shown as EOR.

### 4.3.9 Seaward extensions

These are artificial extensions to the realm that have been made by an Act of Parliament. They extend the local government and parliamentary areas seaward of mean low water (springs) mark.



**Figure 5:** A seaward extension

### 4.3.10 Structures in the sea

Breakwaters are structures of wood, stone, metal or other material built to break the force of waves. They can be separate from or joined to the mainland. If joined, they are generally included in the local government and parliamentary areas. If separate, they are not part of the local government and parliamentary area unless they are placed therein by legislation of some kind, for example, Plymouth breakwater is included in the local government area whilst the centre portion of the Portland Harbour breakwater is not.

Permanent or solid structures in the sea, such as the forts in the Solent off Portsmouth Harbour and Brighton Marina, are usually included in local government and parliamentary areas.

## 5. Data measures

Ordnance Survey measures the data in its products in one or more of the ways set out in table 1 below.

**Table 1:** Definitions of data measures

Data measure	Definition	Sub-measure	Definition
Completeness	Presence and absence of features against the specified data content*	Omission	Features representing objects that conform to the specified data content but are not present in the data.
		Commission	Features representing objects that do not conform to the specified data content but are present in the data.
Logical consistency	Degree of adherence to logical rules of data structure, attribution and relationships	Conceptual consistency	How closely the data follows the conceptual rules (or model).
		Domain consistency	How closely the data values in the dataset match the range of values in the dataset specification.
		Format consistency	The physical structure (syntax): how closely the data stored and delivered fits the database schema and agreed supply formats.
		Topological consistency	The explicit topological references between features (connectivity) – according to specification.
Positional accuracy	Accuracy of the position of features	Absolute accuracy	How closely the coordinates of a point in the dataset agree with the coordinates of the same point on the ground (in the British National Grid reference system).
		Relative accuracy	Positional consistency of a data point or feature in relation to other local data points or features within the same or another reference dataset.
		Geometric fidelity	The ‘trueness’ of features to the shapes and alignments of the objects they represent.*
Temporal accuracy	Accuracy of temporal	Temporal consistency	How well-ordered events are recorded in the dataset (life cycles).

Data measure	Definition	Sub-measure	Definition
	attributes and temporal relationships of features	Temporal validity (currency)	Validity of data with respect to time: the amount of real-world change that has been incorporated in the dataset that is scheduled for capture under current specifications.
<b>Thematic accuracy (attribute accuracy)</b>	Classification of features and their attributes	Classification correctness	How accurately the attributes within the dataset record the information about objects.*

\*When testing the data according to the dataset specification against the 'real world' or reference dataset.

## Annexe A: Case studies

### Creating the right environment for data management: The Welsh Environmental Data Interface (WENDI)

Agriculture, forestry and woodland account for 90% of Wales' land use, generating a wealth of insightful statistical information. The National Assembly for Wales uses this data to inform policy, assist decision-making and help deliver a wide range of services to rural communities.

### Sharing data across the NHS to improve patient services

NHS North West was established under government policy to strengthen primary care trusts (PCTs) and give GPs greater ability to commission or purchase health services directly for their patients. The organisation replaced the three former strategic health authorities in Cumbria and Lancashire, Cheshire and Merseyside, and Greater Manchester. Association of Greater Manchester PCTs is taking forward a data analysis and reporting tool called the TIS Analyser, which was developed by Greater Manchester health organisations as part of the Tactical Information Service (TIS).

Read more at:

<https://www.ordnancesurvey.co.uk/business-and-government/case-studies/index.html>

## Annexe B: Metadata

INSPIRE compliant metadata in conjunction with UK Location Programme is available to access as either:

- [XML format](#) on the main Ordnance Survey website, or
- [XML](#) and [HTML](#) format on the data.gov.uk website.

## Annexe C: Exception Areas

### The Inner and Middle Temples

The 'places' known as 'The Inner and Middle Temples' are within the City of London only for some purposes. They are not shown in Boundary-Line, but their areas have been wholly included within the city and its wards for this dataset. There are two distinct areas with other areas held jointly, and the boundaries are so intermixed that they have never been published by Ordnance Survey separately. A record of these boundaries is, however, held in the Boundary Record Library for reference purposes.

### Parish/community wards

Divisions of parishes (England) and communities (Wales) not included in Boundary-Line.

### Lands common to the Parishes of...

These are areas where the limits of the parishes concerned have not been determined and the area itself is common to (or belongs to) two or more parishes. In Boundary-Line, they are classified as separate parishes with the name *LANDS COMMON TO THE PARISHES OF...* applied (sometimes abbreviated to *LCPs...*).

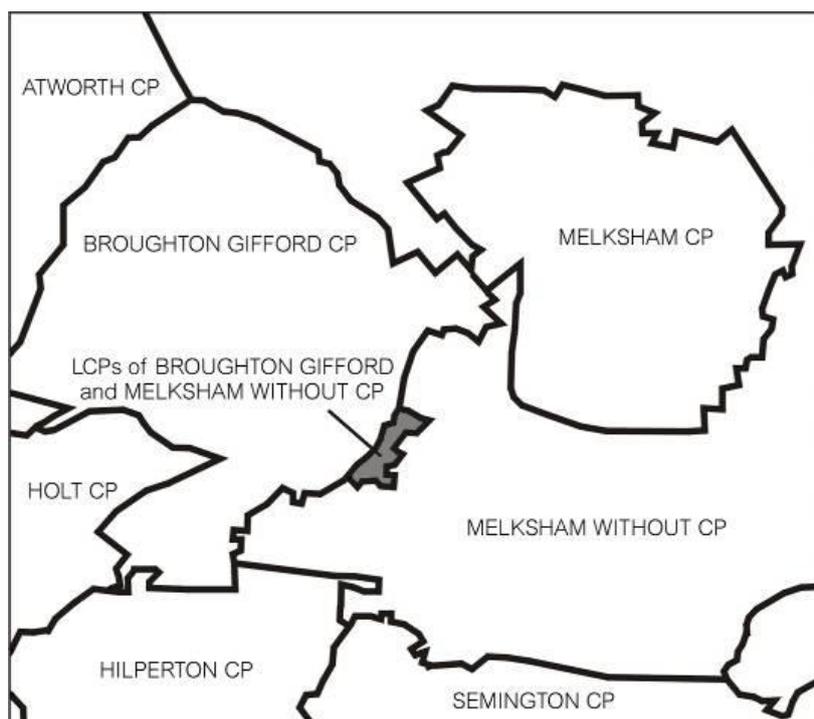


Figure 6: An example of lands common to

### River Dee

The boundary between Wirral metropolitan district in the former county of Merseyside and Cheshire West and Chester unitary authority in the former county of Cheshire and the Flintshire unitary authority area has not been determined, and the line adopted in Boundary-Line is for the purposes of Ordnance Survey only, so that polygons can be created.

## River Mersey

Certain sections of the boundary between the former county of Merseyside (containing the metropolitan districts of Liverpool and Wirral), and in the former county of Cheshire, now Cheshire West and Chester, and Halton have never been determined.

For the purposes of Boundary-Line and by agreement with DCLG:

1. The district boundaries of those parts of Cheshire West and Chester that abut the Mersey estuary have been made coincident with the limits of the relevant district's wards at the centre of the channel at high water (CCHW);
2. The undetermined part of the southern boundary of Liverpool district, in the Mersey estuary, has been made coincident with the limits of that district's wards at the CCHW;
3. The undetermined part of the county boundary between the former county of Merseyside and the former county of Cheshire in that part of the estuary between the new Cheshire West and Chester and Liverpool has been made coincident with the limits of the wards at the CCHW; and
4. The northern limit of the parliamentary constituency of Ellesmere Port and Neston is the mean high-water mark on the south side of the Mersey estuary.

## The wards of Windsor Castle

These 'wards', which include the personal apartments of the Sovereign have no relevance to the election of councillors to electoral areas and are wholly included within the district of Windsor and Maidenhead and its wards.

## Annexe D: Glossary

### accuracy

The closeness of the results of observations, computations or estimates to the true values or the values accepted as being true. Accuracy relates to the exactness of the result and is the exactness of the operation by which the result is obtained.

### administrative area

A blanket term used by Ordnance Survey to refer to all public administrative areas, specifically local government management and electoral areas.

### administrative unit

A single administrative area.

### area

A spatial extent defined by circumscribing lines that form a closed perimeter that does not intersect itself.

### attribute

An attribute is a property of an entity, usually used to refer to a non-spatial qualification of a spatially referenced entity. For example, a name or descriptive code indicating what an entity represents or how it should be portrayed.

### boundary

Boundaries define the areas of the various national, local government and some European authorities.

### Code

An alphanumeric attribute code used in digital map data to describe each feature in terms either of the object surveyed or its representation on the map (or both).

### coding

Allocation of a feature code to a feature being created from constituent construction data – points and/or segments; with optional linking to an existing feature of the same feature code.

### Coordinates

Pairs of numbers expressing horizontal distances along original axes. Alternatively, triplets of numbers measuring horizontal and vertical distances. Row and column numbers of pixels from raw imagery are not considered coordinates for the purpose of the standard.

### currency

An expression of the up-to-dateness of data

### **data structure**

The defined logical arrangement of data as used by a system for data management; a representation of a data model in computer form.

### **distinctive name**

A text feature consisting of text string(s) which form(s) a proper name.

### **entity**

Something about which data is stored in a databank or database. For example, boundary and name. The data may consist of relationships, attributes, positional and shape information and so on. Often synonymous with feature.

### **explicit**

Data that is directly represented in digital form. For example, the relationship between two objects is explicit if recorded by such means as pointers and does not have to be deduced by further analysis of the data.

### **Feature**

An item of detail within a map that can be a point and/or symbol, text or line.

### **geographical information system (GIS)**

A system for capturing, storing, checking, integrating, analysing and displaying data that is spatially referenced to the Earth. This is normally considered to involve a spatially referenced computer database and appropriate applications software.

### **Layer**

A subset of digital map data selected on a basis other than position. For example, one layer might consist of all features relating to counties and another to wards. Also known as a level.

### **Level**

A level corresponds to a single type of administrative unit, for example a ward or a district, and is conceptual in form. See also layer.

### **Line**

A series of connected coordinated points forming a simple feature with homogeneous attribution.

### **line feature**

The spatial abstraction of an object in one dimension. Lines may intersect with other lines. They are defined as a series of two or more coordinate pairs and may be curved or straight. Curved lines consist of a series of very short straight line segments. As an object abstraction, a line has no width.

## **link or edge**

Links are the representation of line features. They are made up of one or more consecutive non-intersecting link segments with common attributes between two terminating nodes. Links have no connection with other links except at the start or end, via common (shared) terminating nodes (points). All links contain their terminating coordinates. Links may form the boundaries of polygons and may be shared between polygons.

## **name**

The proper name or label of an object (real world) or feature (object abstraction). The descriptive name might consist of one or more text strings or be an attribute of the object or object abstraction.

## **National Grid**

A unique referencing system that can be applied to all Ordnance Survey maps of Great Britain (GB) at all scales. It is used by Ordnance Survey on all post-war mapping to provide an unambiguous spatial reference in Great Britain for any place or entity whatever the map scale. The National Grid is defined by the OSGB36 spheroid.

## **Object**

A collection of entities which form a higher-level entity within a specific data model.

## **object (real world)**

A recognisable discrete part of the real world.

## **operative date**

The date the order was made; not necessarily the day it becomes 'live and in use'.

## **Origin**

The zero point in a system of rectangular coordinates.

## **polygon**

Polygons are a representation of areas. A polygon is defined as a closed line or perimeter completely enclosing a contiguous space and is made up of one or more links. At least one node occurs on the perimeter of a polygon where the bounding link completes the enclosure of the area. There may be many nodes connecting the bounding links of a polygon. Links may be shared between polygons. Polygons may wholly contain other polygons; or be contained within other polygons.

## **positional accuracy**

The degree to which the coordinates define a point's true position in the world, directly related to the spheroid and/or projection on which the coordinate system is based.

## **record**

A set of related data fields grouped for processing.

## **rectangular coordinates**

Also known as X-Y coordinates and as eastings and northings. These are two-dimensional coordinates that measure the position of any point relative to an arbitrary origin on a plane surface (for example, a map projection).

## **relative accuracy**

The measure of the internal consistency of the positional measurements in a dataset. For many local area purposes, for example, records of utility plant, relative accuracy is more important than absolute accuracy. In this case, accurate measurement of offsets from fixed points is required rather than knowledge of the true position in space.

## **Resolution**

A measure of the ability to detect quantities. High resolution implies a high degree of discrimination but has no implication as to accuracy. For example, in a collection of data in which the coordinates are rounded to the nearest metre, resolution is 1 metre, but the accuracy may be  $\pm 5$  metres or worse.

## **Segment**

A chord defined by two consecutive coordinates in a line string.

## **Statutory Instrument**

An order made by a Minister under delegated power from Parliament. Contains changes to boundary information, the alignment, type or relationship to a named area (amalgamation) or a change of name to an area are made by order.

## **transfer format**

The format used to transfer data between computer systems. In general usage, this can refer not only to the organisation of data, but also to the associated information, such as attribute codes, which are required in order to successfully complete the transfer.

## **Vector**

A straight line joining two data points.