



OS VectorMap[®] Local Colour Raster

User guide and technical specification

OS VectorMap® Local Colour Raster

User guide

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Preface

This user guide (hereafter referred to as the guide) is designed to provide an overview of OS VectorMap Local Raster (hereafter referred to as the product). It gives guidelines and advice on how a customer might derive the maximum benefit from the product. It assumes a general knowledge of geographic information. If you find an error or omission in this guide, or otherwise wish to make a comment or suggestion as to how we can improve the guide, please contact us at the address shown below under contact details or complete the product and service performance report form at [annexe A](#) and return it to us.

Contact details

Our Customer Service Centre will be pleased to deal with your enquiries:

Customer Service Centre
Ordnance Survey
Adanac Drive
SOUTHAMPTON
SO16 0AS

General enquiries (calls charged at local rate): +44 (0)8456 05 05 05

Dedicated Welsh Language HelpLine: 08456 05 05 04

Textphone (deaf and hard of hearing users only please): +44 (0)23 8005 6148

customerservices@ordnancesurvey.co.uk

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Back-up provision of the product

You are advised to copy the supplied data to a back-up medium.

Using this guide

The documentation is supplied in portable document format (PDF) only. Free Adobe Reader[®] software, which displays the guide, incorporates search and zoom facilities and allows you to navigate within. Hyperlinks are used to navigate between associated parts of the guide and to relevant Internet resources by clicking on the blue hyperlinks and the table of contents.

If you are unfamiliar with any words or terms used and require clarification please refer to the [glossary](#) at the end of the document.

Chapter 1 OS VectorMap® Local Colour Raster Using this user guide and technical specification

This user guide contains basic information you will need to understand, use and manage OS VectorMap Local Raster. The OS VectorMap Local Raster technical specification contains detailed technical information and data format specification.

[Annexe A](#) in the user guide is a product and service performance report form for you to submit any comments on OS VectorMap Local Raster.

[Annexe A](#) in the technical specification provides a glossary of technical terms.

[Annexe B](#) in the technical specification provides a list of road abbreviations.

Chapter 2 OS VectorMap Local Raster overview

Introduction

OS VectorMap Local Raster is a mapping dataset designed for providing contextual mapping output.

The product provides an image where the detail has been converted to a grid of pixels, which can then be displayed on computer screens. The product covers all of Great Britain and is supplied as tiles aligned to the National Grid. Data is converted into a raster format at a resolution of 400 dots per inch (dpi) and a pixel is equivalent to 0.635 of a metre on the ground. This resolution has been chosen as it maintains the necessary clarity for text shown on the map. The colour version assigns a colour to each pixel; the black and white version assigns the colour black or white to each pixel. The product can be overlaid with other Ordnance Survey products or a customer's own geographic/business data, besides providing a detailed geographic context in its own right.

The product provides customers with a detailed product that is made available in Tiff format to provide either a map of an area when used on its own or as a means of providing geographic context to help a customer visualise their own data.

The product is supplied as graphic image files that can easily be read by many image software packages. To view tiles in geographic relation to each other and to create the best context for its use with other Ordnance Survey or third party data, it is recommended that it is used in a geographical information system (GIS). As can be seen from Figure 1, the pattern of development within the landscape can clearly be seen and this makes this data particularly useful within urban areas. It is typically used to create and plot high-quality maps for producing site plans, web services showing locations, creating maps for use in reports and presentations and providing geographic context for a customer's own data (subject to the terms of that customer's licence).

This product provides contextual map data generated from large-scale source information. It is available as both colour and black and white in a TIFF format. Examples are displayed in Figure1 and Figure 2:

- Colour raster data
The colour values are based on the sRGB colour profile but the TIFFs are supplied as untagged RGB. Most software packages default to the sRGB colour profile but in some cases it may need to be assigned to the TIFFs.
- Style definition
The cartographic styling has been designed as such that if you need to convert the TIFFs to greyscale, the visual hierarchy for the map features will still be maintained.

*NOTE: these are only relevant to the colour raster, **not** the black and white.*

Figure 1: example of VectorMap Local Colour Raster; please see full [colour legend](#) for full content.

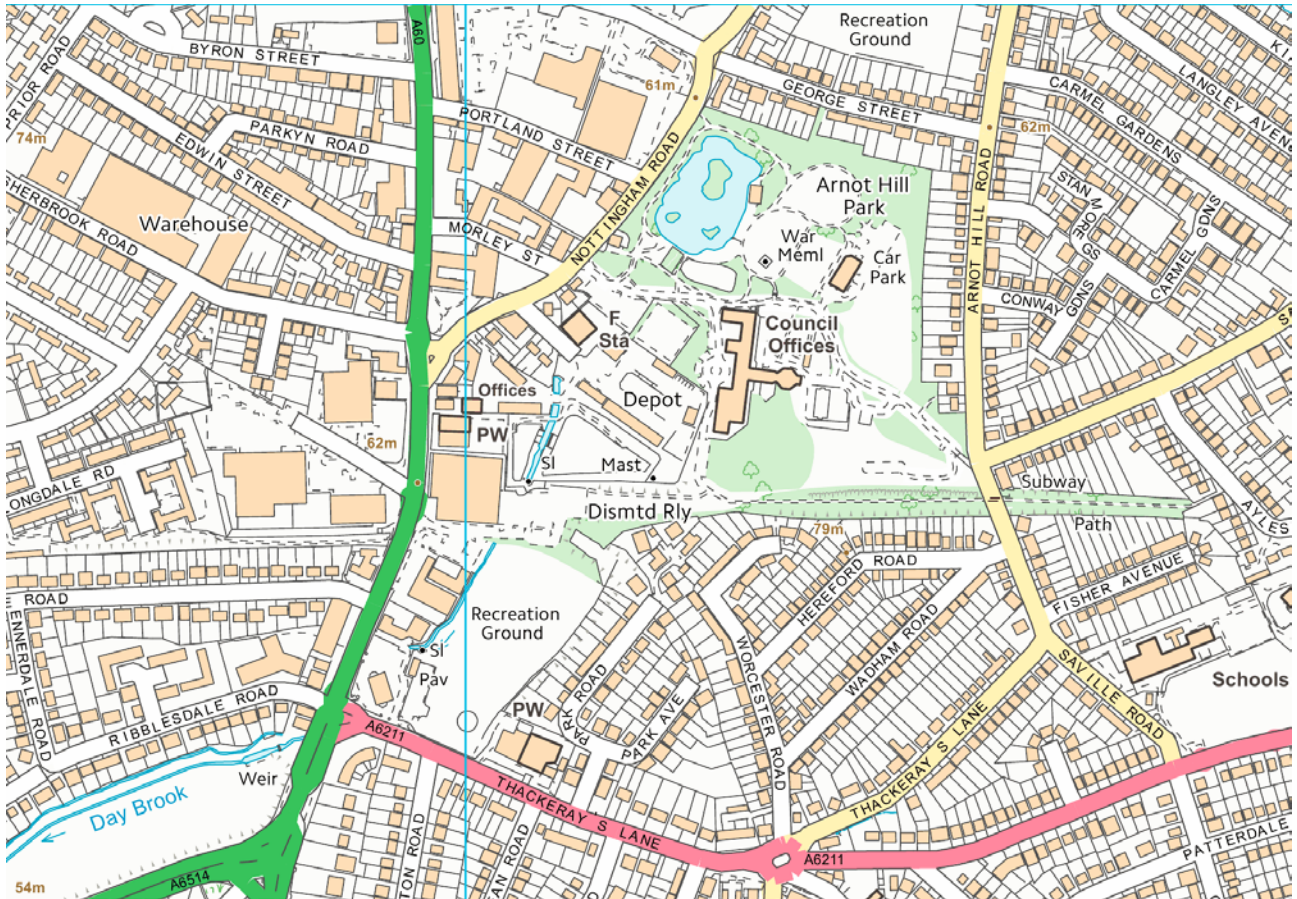


Figure 3: example of VectorMap Local Black and White Raster; please see [black and white legend](#) for full content.



Content

The product contains the following features:

- buildings, structures and leisure areas;
- roads, paths and tracks;
- vegetation and surface features;
- water features and associated detail;
- railways and associated detail;
- spot height;
- archaeological and antiquity information;
- text; and
- miscellaneous information – remote areas, foot bridges, house names and all buildings.

Coverage

OS VectorMap Local Raster is supplied in standard 5 km by 5 km tiles aligned to the National Grid. This is the equivalent in area to 2 500 hectares.

Format

Both colour and black and white versions are available as TIFF format with LZW compression.

TIFF

TIFF is one of the most commonly used lossless image formats. TIFF is primarily designed for raster data interchange, and is supported by numerous image-processing applications. This permits much more efficient access to very large files that have been compressed.

TIFF is a file based format for storing and interchanging raster images, with the most recent version 6.0 published in 1992. There are two types of architecture for a TIFF. Many mainframe computers use what is known as a big-endian (Motorola®) architecture. Most modern computers, including personal computers (PCs), use the little-endian (Intel®) system. OS VectorMap Local Raster TIFFs are supplied with Motorola architecture. Converting between these two systems is possible but, as a general rule, modern software should be expected to handle both of these outputs without operator intervention. The OS VectorMap Local Raster conforms to the TIFF 6.0 standard. Customers are recommended to contact their system suppliers to ensure that it can read the Motorola/big-endian TIFF architecture.

Data compression

The data volumes for each file format are influenced by the level of data compression; in this case LZW compression.

Image compression

When an image is compressed, duplicated data that has no value is removed or saved in a shorter form, reducing a file's size. For example, if large areas of water are the same tone, only the value for one pixel needs to be saved, together with the locations of the other pixels with the same colour. When the image is edited or displayed, the compression process is reversed. When raster is compressed, not only are the data volumes reduced but the user can download, display, edit and transfer images more quickly. There are two forms of compression: *lossless* and *lossy*:

Lossless compression

This product has lossless compression; and its name suggests it does not lose information when compressed. A lossless compression retains the original quality of an image when it is uncompressed. This process does not provide much compression, so file sizes remain large. Lossless compression is used mainly where detail is important, such as when planning to make large prints.

Lossy compression

This process degrades images to some degree, meaning that the decompressed image is not quite the same as the original. The more an image is compressed, the more degraded it becomes. In many situations, such as posting images on the Internet or printing small- to medium-sized prints, the image degradation isn't so obvious. If a lossy compressed image is over enlarged the degradation will become apparent, and therefore OS VectorMap Local Raster is not supplied using this compression.

Revision

The product is updated via a revision programme. The revision programme for OS VectorMap Local Raster is determined by assessing the following factors:

- known surveyed change indicated by the surveyor;
- change indicated by photogrammetric survey (which includes rural survey sweep); and
- consideration is given to how long since an area was last revised.

Priority is given to prestige sites categorised as significant items of change, such as major road construction projects. All tiles in the revision programme are fully revised, which means that all surveyed change is included in the revision, not just significant items of survey change. Where a line feature ends by intersecting the tile edge, it is matched with its corresponding feature on the adjacent tile so that both features end on the same unique coordinate, and both features have the same feature code. The representation of detail across the tile edge will be of a cartographically acceptable standard when plotted or displayed at scale.

A list of all of the tiles that comprise national cover is updated every month on the product page. This table download provides the date of last revision for every tile in the product.

<http://www.ordnancesurvey.co.uk/oswebsite/products/10k-raster/>

Chapter 3 Applications of OS VectorMap Local

The purpose of OS VectorMap Local Raster data is to support a wide range of customer applications that utilise geographic information.

Applications of OS VectorMap Local Raster

The purpose of OS VectorMap Local Raster data is to support a wide range of customer applications that utilise geographic information. These may include:

- Backdrop mapping on your website.
- Develop an interactive web application.

It has been designed for onscreen use, with generalised detail and an appropriate level of content that gives an uncluttered appearance.

- Display your business location.

What you need to use the product

Computer software

The data is supplied in Geo TIFF and can be viewed using imaging software or a GIS to correctly geographically display it.

If for some reason the Geo TIFF files do not load the data correctly then the 1:10 000 raster geo referencing files can be found at:

<http://www.ordnancesurvey.co.uk/oswebsite/products/geo-referencing.html>

Supply format

The product is available as:

- Raster: TIFF and compressed using LZW (Lemple-Ziv-Welch); a lossless compression.

Supply media

The data can be ordered from the Ordnance Survey website.

Data is available on CD; DVD or as a download from:

<http://www.ordnancesurvey.co.uk/oswebsite/public-sector/mapping-agreement/index.html>

File structure

This is dependent on the customer order for example a GB structure below

Supply structure

EXAMPLE - GB

```
ROOT
|
|-- DATA
|   |-- GB*
|       |-- ENGLAND
|           |--...(.tif files)
|       |-- SCOTLAND
|           |--...(.tif files)
|       |-- WALES
|           |--...(.tif files)
|
|--DOC
|   |--DISCCARE.txt
```



```
|  |--REPORT.txt
|  |--LICENCE.txt
|  |--MEDIALIS.txt
|
|--EXE
|
|--README.txt
```

Chapter 4 OS VectorMap Local Raster explained

Currency

The product is derived from large-scale data, copyright 2011.

Completeness

During production many checks are undertaken to ensure that data supplied to customers are both accurate and complete. During digital manipulation in creating the data, all sources of that data are checked for conformance to specification.

These quality control checks take the form of:

- visual checks by operators;
- data testing against the product specification; and
- testing carried out on a selection of tiles from a full national set.

Coordinate resolution

Coordinates have a precision of 1 cm and are stored to two decimal places of a metre.

Generalisation

The detail within OS VectorMap Local Raster has been generalised when compared to detail within OS MasterMap® Topography Layer. Map generalisation is the process of reducing the scale and complexity of map detail whilst maintaining the important elements and characteristics of the location.

- **Selection/omission:** some features that appear at larger scales are not selected at the smaller scales. For example, many small buildings that appear in OS MasterMap Topography Layer are omitted from OS VectorMap Local Raster.
- **Simplification:** simplification can take a number of forms in OS VectorMap Local Raster. It can be line simplification, for example, a very winding stream could have the number of data points that represent it reduced; railway lines that are represented in OS MasterMap Topography Layer as two rails are depicted in OS VectorMap Local Raster as a single centre line; the number of vegetation classifications are reduced; small juts and recesses on buildings are either omitted or enlarged to maintain the basic shape.
- **Exaggeration:** features that are small but are too important to a particular landscape to be omitted are enlarged. For example, rural buildings are often enlarged to a minimum size rather than being omitted; narrow roads are widened to a minimum distance to enable road text to be shown within the road casings
- **Aggregation:** aggregation is the combining of a number of small features to make a larger one. There is little aggregation carried out for OS VectorMap Local Raster. Some railway sidings' centrelines are aggregated. Detached buildings are not aggregated with adjacent buildings, thus enabling the different house building styles – detached, semi-detached and terraced – to be clearly interpreted from the data.
- **Typification:** where features form a regular pattern but space does not allow them all to be shown, then a selection may be shown that depicts the nature of the pattern. An example in OS VectorMap Local Raster is the depiction of back garden fences in dense urban landscapes where only sufficient are shown to indicate the nature and character of the gardens
- **Symbolisation:** features that are shown in detail in OS MasterMap Topography Layer may be shown by standard symbolisation in OS VectorMap Local Raster. For example, electricity pylons are depicted as oriented point symbols; road alignments are trimmed to minimum distance when roads pass under railways or other roads to indicate a bridge.
- **Displacement:** the movement of the representation of a feature away from its ground position in order to maintain its prominence. There is very little displacement in OS VectorMap Local Raster, but in certain circumstances some water features, for example, streams, may be moved away from adjacent detail if their representation would otherwise be lost and some buildings are moved away from road edges to ensure they remain prominent.

Detailed product content

Buildings

Generally only buildings over 50 m² are represented, although in rural areas some smaller buildings may be enlarged to this minimum size if they are deemed to be significant in the landscape.

Important buildings constitute places of public interest and include such places as civic offices, places of worship, libraries, hospitals, post offices, railway stations, and museums and so on.

Commercial greenhouses over 500 m² are shown.

Building divisions are only shown where they are necessary to distinguish an important building.

Roads

Roads are depicted in two ways in OS VectorMap Local Raster:

- **Road fills:** these represent DfT classifications
- **Road casings:** are the road extents that appear in the current 1:10 000 Scale Raster and OS Landplan[®] products. They have a minimum width of 14 ground metres.

NOTE: the road casings and the road fill alignments are sourced from data with different currencies. It is possible, in isolated instances, that there could be a discrepancy between them. As the offending tiles are identified they are corrected and the issue will be resolved as the national dataset goes into a normal revision cycle. We apologise for any inconvenience this may cause and encourage you, please, to notify us of any instances you find using the product and service performance report in [annexe A](#).

NOTE: Welsh road names may be abbreviated to a single letter (as per English names) where it can be identified by knowledge or repetition provided at least one example is shown in full nearby, (for example Hoel/Hewl – H). If a road is named in both languages but there is insufficient room to show both only the Welsh version is shown.

Lakes, ponds, rivers and streams

Lakes and ponds greater than 100 m² are shown

Rivers and streams narrower than 5 m are shown as a single line

Water features are broken under bridges or other detail.

Mean high and low water

Mean high water/mean high water springs (Scotland) is shown and Mean low water/Mean low water springs (Scotland) is shown.

Where the limit of coastal rock ornament defines the low water mark, mean low water is omitted.

The tidal limits are shown for their full extents, including from the mouths of river to the normal tidal limit (NTL). There is no specific feature defining NTL, although there is usually a textual description.

Areas of sea are depicted.

Railways

All railways are depicted as single alignments; these are broken where they pass under bridges, buildings or other obstructing detail.

General line detail

General line detail includes a number of real world features, including fences, hedges, walls and other minor detail; ETL; tracks and paths as a pecked detail.

Vegetation

Vegetation extents are defined. Suitable vegetation symbols and fill patterns are applied.

Names and cartographic text

There are a number of features displayed:

- 'Antiquity names' These include both distinctive and descriptive names.
- 'Water name' distinctive or descriptive names of water features, for example, 'River Avon' or 'Drain'.
- 'Spot height label' – height value of an adjacent Spot height symbol.
- 'Building name' – distinctive or descriptive names of buildings, for example, 'Home Farm' or 'pumping station'.
- 'Road Names' – these are cartographically-positioned road names as appear on the 1:10 000 Scale Raster products.
- 'Important building name' – distinctive or descriptive names of important buildings, for example, 'Elmhurst School' or 'school'. Every important building will have a textual description.
- Distinctive or descriptive names. The more important names, for example, settlement names such as 'Rotherham', will have a larger text height than descriptive names, for example, 'dismantled railway'.
- Scottish and Welsh place/area names.

Where a name has an alternative form in a different language and it is impossible to establish which of the two names is more useful and acceptable, then both names are shown. Where there is insufficient room to show both names only one will be shown:

- in Wales – the Welsh version; and
- in Scotland – the anglicised version.

Ornamental features

Landform features such as slope symbols, flat rock, scree, cliffs and so on are represented. A style has been applied; these give a very good traditional artistic representation of landform ornament.

Height

Height is represented by:

- **Spot heights:** the geographic position of ground-surveyed spot heights are represented by a spot height value.

Archaeological and antiquity information

Antiquity information is derived primarily from the source basic-scales data and every effort is made to represent antiquity detail as faithfully as possible. Many antiquity sites, for example, tumuli, mottes, cairns and so on are represented by standard symbology such as slope symbols. Sites that have no standard representation are represented by 'Antiquity site' symbol

For additional information and examples of the content listed above see legends ([colour](#) and/or [Black and white](#)).

Scottish and Welsh place/area names

Where a name has an alternative form in a different language and it is not possible to establish which of the two names is more useful and acceptable, both names will be shown. Where there is insufficient space to show both names, only one will be shown:

- in Scotland – the anglicised version; and
- in Wales – the Welsh version.

Edgematching

Tiles are complete in themselves, that is, all text falls within the tile body and all polygons that cross tile borders are closed along the tile edges.

Where a feature ends by intersecting a tile edge, it is matched with its corresponding feature on the adjacent tile, so that both features have the same unique coordinates and the same feature code. The representation of detail across the tile edge will be of a cartographically-acceptable standard when viewed or plotted at a scale of approximately 1:5 000 or smaller.

There are no features or text outside the tile edges.

TIFF

The main characteristics of the raster dataset:

- Can be viewed using typical desktop software.
- Supplied in a predefined graphical style – see example below and the [colour legend](#).
- Can be viewed by most image-reading software packages.
- GEO TIFF information is embedded within a TIFF file, enabling the raster tiles to be georeferenced.

Scale

OS VectorMap Local Raster is derived from large-scale information surveyed at:

- 1:1250 scale – covering major towns and cities;
- 1:2500 scale – smaller towns, villages and developed rural areas; and
- 1:10 000 scale – mountain, moorland and river estuary areas.

Generalisation is used to emphasise, simplify, select and sometimes omit features to produce a cartographic representation of the landscape at a scale of 1:10 000.

The recommended printed copy or plot output is at 1:10 000 scale, but viewing the data on a computer screen is normally between 1:3000 and 1:8000 scale.

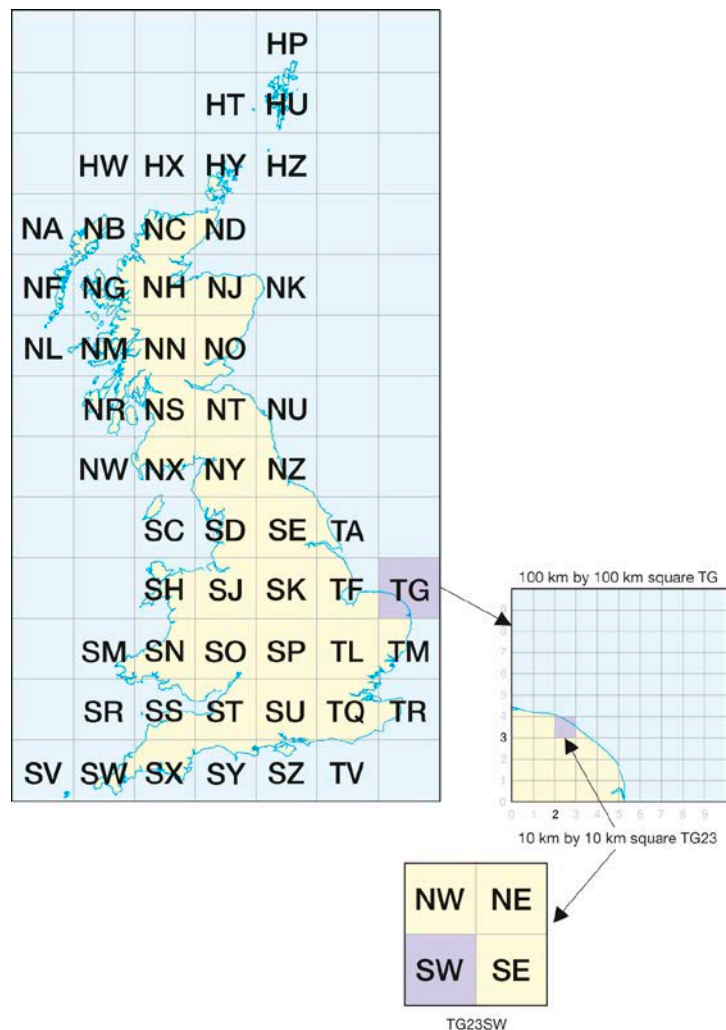
The National Grid

OS VectorMap Local Raster tiles are identified by quoting the National Grid reference of the south-west corner of the area they cover. Ordnance Survey divides Great Britain into squares 100 km by 100 km. Each of these squares has a unique two-letter reference, for example, TG in the diagram below.

To describe an OS VectorMap Local Raster tile, first add a two digit reference to the 100 km by 100 km square reference, with the easting first followed by the northing, for example, TG23. Then identify which quadrant of that grid square is required and add SW, SE, NW or NE to the reference, for example, TG23SW.

For additional information on how to use the National Grid, visit the Ordnance Survey's website at:

<http://www.ordnancesurvey.co.uk>



Annexe A Product and service performance report form

Ordnance Survey welcomes feedback from its customers about OS VectorMap® Local Colour Raster.

If you would like to share your thoughts with us, please print a copy of this form and when completed post or fax it to the address below.

Your name:

Organisation:

Address:

.....

Postcode:

Phone:

Fax:

Email:

Quotation or order reference:

Please record your comments or feedback in the space below. We will acknowledge receipt of your form within three (3) working days and provide you with a full reply or a status report within 21 working days.

If you are posting this form, please send it to:

OS VectorMap Local Raster Product Manager, Ordnance Survey, Adanac Drive, SOUTHAMPTON, SO16 0AS.

If you wish to return it by fax, please dial 023 8005 6159.

Any personal information that you supply with this report form will be used by Ordnance Survey only in the improvement of its products and services. It will not be made available to third parties.

OS VectorMap® Local Colour Raster

Technical specification

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	Black and white raster image file directory (TIFF)
Annexe A	Glossary
Annexe B	Road abbreviations

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Introduction

Purpose of this specification and disclaimer

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Chapter 1 Technical specification

The following chapters include information about OS VectorMap Local Raster data, legends and georeferencing.

Specification OS VectorMap Local Colour Raster and Black and White

Greyscale: A high-quality alternative to black and white data is to use a GIS to convert colour data to greyscale format.

NOTE: greyscale file sizes are significantly larger than black and white data, for example, greyscale 60 Mb uncompressed, black and white 8 Mb uncompressed.

Data source	OS Landplan 1:10 000 Scale production database
Number of tiles:	Great Britain 10 587 (edgematched)
Tile size	5 km by 5 km
Availability	National coverage or tile based
Resolution	400 dots per inch
Data structure	Raster
Supply	CD; DVD or download
Update	Complete tile resupply
Transfer format	TIFF 8-bit compressed (LZW)
Storage volumes	Colour 5 Mb–15 Mb Black and White 1 Mb–5 Mb (approximate)
Update frequency	Continuous update

Chapter 2 Full colour raster legend



OS VectorMap® Local Full Colour Raster version

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COMMUNICATIONS (TRANSPORT)

Depicted roads are not necessarily rights of way

	Motorway
	Primary road
	Main road ('A' road)
	Secondary road ('B' road)
	Minor road
	Local street
	Private road with public access
	Pedestrianised street
	Multiple track railway
	Single track railway or siding
	Narrow gauge railway
	Road or rail tunnel

SETTLEMENT

	Building		Important building
	Glasshouse		
	Overhead building line		

VEGETATION

	Broad-leaved woodland		Coniferous woodland
	Mixed woodland		Orchard
	Shrub		Unimproved grass
	Heathland		Marsh
	Reeds		

WATER FEATURES

	Water (surface or tidal)
	Water
	Mean high water
	Mean low water
	Direction of flow arrows
	Water point features (for example Wells, Springs)

HEIGHT

Surface heights are in metres above mean sea level

	57m Height
--	------------

LANDFORMS

	Ornament
	Inland rock
	Boulders
	Shingle
	Cliff
	Large slopes
	Standard slopes
	Mud
	Gravel pit
	Refuse tip or slag heap
	Sand
	Sand pit

POINT & LINE FEATURES

	General line detail
	Overhead detail
	Electricity transmission line
	Pylon
	Triangulation station
	Point features (for example Shafts, Posts)
	Site of antiquity

COMMON ABBREVIATIONS

CG.....	Cattle grid
Chy.....	Chimney
Coll.....	College
Ct.....	Court
El Sub Sta.....	Electricity sub station
FB.....	Footbridge
Fl Sk.....	Flare stack
Fn.....	Fountain
FS.....	Flagstaff
GP.....	Guide post
LC.....	Level crossing
Liby.....	Library
Meml.....	Memorial
MHW(s).....	Mean high water (springs)
MLW(s).....	Mean low water (springs)
Mon.....	Monument
MP, MS.....	Mile post or stone
NTL.....	Normal tidal water
P, Ps.....	Post(s) or pole(s)
PH.....	Public House
PO.....	Post office
Pol Sta.....	Police Station
PW.....	Place of worship
Sch.....	School
Spr.....	Spring
Sta.....	Station
Tk.....	Tank or track
W.....	Well

Chapter 3 Backdrop colour raster legend



OS VectorMap® Local Colour Backdrop Raster version

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COMMUNICATIONS (TRANSPORT)

Depicted roads are not necessarily rights of way

	Motorway
	Primary road
	Main road ('A' road)
	Secondary road ('B' road)
	Minor road
	Local street
	Private road with public access
	Pedestrianised street
	Multiple track railway
	Single track railway or siding
	Narrow gauge railway
	Road or rail tunnel

SETTLEMENT

	Building		Important building
	Glasshouse		
	Overhead building line		

VEGETATION

	Broad-leaved woodland		Coniferous woodland
	Mixed woodland		Orchard
	Shrub		Unimproved grass
	Heathland		Marsh
	Reeds		

WATER FEATURES

	Water (surface or tidal)
	Water
	Mean high water
	Mean low water
	Direction of flow arrows
	Water point features (for example Wells, Springs)

HEIGHT

Surface heights are in metres above mean sea level

57m Height

LANDFORMS

	Ornament		
	Inland rock		
	Boulders		
	Shingle		
	Cliff		
	Large slopes		
	Standard slopes		
	Mud		Sand
	Gravel pit		Sand pit
	Refuse tip or slag heap		

POINT & LINE FEATURES

	General line detail
	Overhead detail
	Electricity transmission line
	Pylon
	Triangulation station
	Point features (for example Shafts, Posts)
	Site of antiquity

COMMON ABBREVIATIONS

CG	Cattle grid
Chy	Chimney
Coll	College
Ct	Court
El Sub Sta	Electricity sub station
FB	Footbridge
Fl Sk	Flare stack
Fn	Fountain
FS	Flagstaff
GP	Guide post
LC	Level crossing
Liby	Library
Meml	Memorial
MHW(s)	Mean high water (springs)
MLW(s)	Mean low water (springs)
Mon	Monument
MP, MS	Mile post or stone
NTL	Normal tidal water
P, Ps	Post(s) or pole(s)
PH	Public House
PO	Post office
Pol Sta	Police Station
PW	Place of worship
Sch	School
Spr	Spring
Sta	Station
Tk	Tank or track
W	Well

Chapter 4 Black and white raster legend



OS VectorMap® Local Black and White Raster version

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COMMUNICATIONS (TRANSPORT)

Depicted roads are not necessarily rights of way

	Roads
	Multiple track railway
	Single track railway or siding
	Narrow gauge railway
	Road or rail tunnel

SETTLEMENT

	Building		Important building
	Glasshouse		
	Overhead building line		

VEGETATION

	Broad-leaved woodland		Coniferous woodland
	Mixed woodland		Orchard
	Shrub		Unimproved grass
	Heathland		Marsh
	Reeds		

WATER FEATURES

	Surface water
	Water
	Mean high water
	Mean low water
	Direction of flow arrows
	Water point features (for example Wells, Springs)

HEIGHT

Surface heights are in metres above mean sea level

57m Height

LANDFORMS

	Ornament
	Inland rock
	Boulders
	Shingle
	Cliff
	Large slopes
	Standard slopes
	Gravel pit Sand pit Refuse tip or slag heap

POINT & LINE FEATURES

	General line detail
	Overhead detail
	Electricity transmission line
	Pylon
	Triangulation station
	Point features (for example Shafts, Posts)
	Site of antiquity

COMMON ABBREVIATIONS

CG.....	Cattle grid
Chy.....	Chimney
Coll.....	College
Cl.....	Court
El Sub Sta.....	Electricity sub station
FB.....	Footbridge
Fl Sk.....	Flare stack
Fn.....	Fountain
FS.....	Flagstaff
GP.....	Guide post
LC.....	Level crossing
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MHW(s).....	Mean high water (springs)
MLW(s).....	Mean low water (springs)
Mon.....	Monument
MP, MS.....	Mile post or stone
NTL.....	Normal tidal water
P, Ps.....	Post(s) or pole(s)
PH.....	Public House
PO.....	Post office
Pol Sta.....	Police Station
PW.....	Place of worship
Sch.....	School
Spr.....	Spring
Sta.....	Station
Tk.....	Tank or track
W.....	Well

Chapter 5 Georeferencing

A definition for registering raster images within a geographic framework is the process of assigning map coordinates to the raster image data and re-sampling the pixels of the image to conform to the map projection grid. This allows tiles of map data to be located in their correct geographic position relative to the map projection and also to themselves.

Great Britain is surveyed and mapped using the Transverse Mercator (or Gauss-Kruger) projection, so all raster tiles will be mapped to this projection as it applies to Ordnance Survey National Grid if using World or TAB files supplied by Ordnance Survey.

In this product the 'GeoTIFF' includes geographic (or cartographic) data embedded as tags within the TIFF file. The geographic data can then be used to position the image in the correct location on the screen of a GIS display.

NOTE: the final four tags in the tables below contain the information which places the data in its correct geographical position.

Colour raster image file directory (TIFF)

A selection of Tags from the image file directory for TIFF NT81NE:

Tag 254 (NewSubfileType)	An indication of the kind of data contained in this sub-file, for example, Value = 0
Tag 256 (ImageWidth)	The number of columns in the image, the number of pixels per row, for example, Value = 7874
Tag 257 (ImageLength)	The number of rows of pixels in the image, for example, Value = 7874
Tag 258 (BitsPerSample)	Number of bits per component, for example, value = 8
Tag 259 (Compression)	Compression scheme used on the image data, for example, value = 5 (LZW)
Tag 262 (Photo.Interpretation)	The colour space of the image data, for example, value = 3 (RGB Palette).
Tag 270 (ImageDescription)	A string that describes the subject of the image, for example, value = 1:10 000 TILE NT81NE
Tag 273 (StripOffsets)	For each strip, the byte offset of that strip, for example, 1st 4 values = 64827 64970 65113 65268
Tag 278 (RowsPerStrip)	The number of rows in each strip, for example, value = 32
Tag 279 (StripByteCounts)	For each strip, the number of bytes in that strip after compression, for example, 1st 4 values = 9631 13897 7702 13651
Tag 282 (XResolution)	The number of pixels per Resolution Unit in the Image Width, for example, value = 400/1
Tag 283 (YResolution)	The number of pixels per Resolution Unit in the Image Length, for example, value = 400/1
Tag 296 (ResolutionUnit)	Units used for Resolution, for example, value = 2 (inch)
Tag 306 (DateTime)	Date and time of image creation, for example, value = 2006:06:30 12:38:41
Tag 320 (ColourMap)	Look-up table example, value = 1st 4 values = 6425 8224 10280 13621
Tag 33432 (Copyright)	Copyright notice, for example, value = ORDNANCE SURVEY CROWN COPYRIGHT 2011
Tag 33550 (Scale Tag)	ModelPixelScaleTag, value = .635 .635 .000
Tag 33922 (Point Tag)	ModelTiepointTag, value = 1st 4 values = .000 .000 .000 385,000.157
Tag 34735 (Geo Tiff)	GeoKeyDirTag, value = 1st 4 values = 1 1 0 7
Tag 34737 (Projection)	Geo TIFF, value = OSGB 1936/British National Grid OSGB 1936

Black and white raster image file directory (TIFF)

A selection of Tags from the image file directory for TIFF NZ62SW:

Tag 254 (NewSubfileType)	An indication of the kind of data contained in this sub-file, for example, Value = 0
Tag 256 (ImageWidth)	The number of columns in the image, the number of pixels per row, for example, Value = 7874
Tag 257 (ImageLength)	The number of rows of pixels in the image, for example, Value = 7874
Tag 258 (BitsPerSample)	Number of bits per component, for example, value = 1
Tag 259 (Compression)	Compression scheme used on the image data, for example, value = 5 (LZW)
Tag 262 (Photo.Interpretation)	The colour space of the image data, for example, value = 1 (BlackIsZero).
Tag 270 (ImageDescription)	A string that describes the subject of the image, for example, value = 1:10 000 TILE NZ62SW
Tag 273 (StripOffsets)	For each strip, the byte offset of that strip, for example, 1st 4 values = 2567 7253 12249 17320
Tag 278 (RowsPerStrip)	The number of rows in each strip, for example, value = 32
Tag 279 (StripByteCounts)	For each strip, the number of bytes in that strip after compression, for example, 1st 4 values = 4686 4996 5071 5675
Tag 282 (XResolution)	The number of pixels per Resolution Unit in the Image Width, for example, value = 400/1
Tag 283 (YResolution)	The number of pixels per Resolution Unit in the Image Length, for example, value = 400/1
Tag 296 (ResolutionUnit)	Units used for Resolution, for example, value = 2 (inch)
Tag 306 (DateTime)	Date and time of image creation, for example, value = 2006:06:30 12:38:41
Tag 320 (ColourMap)	Look-up table example, value = 1st 4 values = 0 65535 0 65535
Tag 33432 (Copyright)	Copyright notice, for example, value = ORDNANCE SURVEY CROWN COPYRIGHT 2011
Tag 33550 (Scale Tag)	ModelPixelScaleTag, value = .635 .635 .000
Tag 33922 (Point Tag)	ModelTiepointTag, value = 1st 4 values = .000 .000 .000 460,000.125
Tag 34735 (Geo Tiff)	GeoKeyDirTag, value = 1st 4 values = 1 1 0 7
Tag 34737 (Projection)	Geo TIFF, value = OSGB 1936/British National Grid OSGB 1936

Annexe A Glossary

The purpose of this chapter is to provide a glossary of terms used in the definition of products, services, licensing and other terms and conditions for OS VectorMap Local Raster.

American Standard Code for Information Interchange (ASCII)

A standard binary coding system used to represent characters within a computer.

binary digit (bit)

The smallest possible unit of data, resulting from a choice between 0 and 1.

boundary

A boundary forms the division between two similar real-world objects, for example, property boundary or administrative boundary, and is defined by one or more lines.

byte

A unit of computer storage of binary data, usually comprising 8 bits, equivalent to a character.

character

A distinctive mark; an inscribed letter; one of a set of writing symbols.

character code

The binary representation of a single element of a character set; for example, EBCDIC, ASCII.

coordinate pair

A coordinate pair is an easting and a northing (see rectangular coordinates).

coordinate transformation

A computational process of converting an image or map from one coordinate system to another.

compact disc

Read only memory (CD-ROM). A data storage medium. A 12-cm disc similar to the audio CD. It is an alloy disc pitted with tiny holes and then coated in plastic. A laser head reads the pattern of the holes and translates them into binary data.

copyright

The sole legal right to print or publish a work. Crown Copyright subsists in all Ordnance Survey publications for a 50-year period, from the end of the year in which they were first published, by virtue of the *Copyright Designs and Patents Act 1988*.

customer

An organisation or individual that makes use of Ordnance Survey's data supply facilities. This includes both direct sales customers of Ordnance Survey as well as customers of Licensed Partners. It does not include anyone, or any organisation, that has access to Ordnance Survey material without charge.

data

A representation of facts, concepts or instructions in a formalised manner suitable for communication, interpretation or processing.

database

An organised, integrated collection of geographic data, which may or may not be spatial data. It is stored so that specific applications can access the data by different logical paths. A database is accessed and managed by a database management system (software for managing database information).

data format

A specification that defines the order in which data is stored or a description of the way data is held in a file or record.

data quality

Attributes of a dataset that define its suitability for a particular purpose, such as completeness, positional accuracy, currency and so on.

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.

data transfer medium

This is the means by which computer files are transferred from one computer to another. Transfer media may be subdivided into communications media and physical media.

dataset

Data as supplied in a particular format to customers, whether internal or external to Ordnance Survey.

density

A measure of the number of units of data held on a stated length of storage surface. For example, some magnetic tapes may be recorded at a density of 1 600 bits per inch (bpi). Often referred to as packing density.

delivery mechanism

The method of supply of data to a customer (such as offline and online).

descriptive name

A name describing a real-world object or feature (for example, School) as shown on the OS VectorMap Local Raster map.

definitive name

The name as shown on the OS VectorMap Local Raster map.

digital

Data that is expressed as numbers (digits) in computer-readable form.

digital update

The supply of digital data to a customer at a predetermined interval of time if, when the time interval has elapsed, the map has reached an agreed level of change.

direct sale

A direct transaction between Ordnance Survey and a customer.

distinctive name

A text feature that form(s) a name that distinguishes it from other text features of the same type, for example, Millbrook School.

dots per inch (dpi)

The resolution, or fineness, of a raster image.

eastings

See rectangular coordinates.

ECW

The Enhanced Compressed Wavelet (ECW) raster image compression software has been designed to compress, display, serve on the Internet and distribute raster. The key characteristic of wavelet-based compressions is that it is able to preserve a very good quality of the image with high compression ratios.

This compression format uses mathematical wavelet transformations to store image data rather than storing a grid of values for image pixels such as TIFF or other common formats. This allows a great reduction in the amount of disk space it takes to store large images, whilst retaining nearly all the original image's quality, colour and detail.

ECW is a lossy format, meaning that some information is lost when the image is converted from its original format to the ECW format. However, wavelet compression is very good at retaining the character of images, so the amount of loss is very small.

JPEG

An image named after the Joint Photographic Experts Group, it uses a lossy compression format. It is designed for compressing a full colour or greyscale images of natural, real-world scenes and works well on photographs. It is the de facto standard for photographs on the web.

encoding

The process of converting information to a computer-readable form, for example, digitising maps.

Extended binary Coded decimal Interchange code (EBCDIC)

An 8-bit-character encoding scheme. For example, 100111100. These can also be letters or specific characters, for example, + =.

feature

A geographic entity such as a building or stream, either taken from a map or surveyed directly from the real world. Can be a point/symbol, text or line.

format

The specified arrangement of data, for example, the layout of a printed document, the arrangement of the parts of a computer instruction, the arrangement of data in a record.

geographic coordinates

Coordinates, usually expressed as latitudes and longitudes, which define position on the Earth's surface.

georef

A definition for registering raster images within a geographic framework, is the process of assigning map coordinates to the raster image data and resampling the pixels of the image to conform to the map projection grid.

gigabyte (Gb)

1 073 741 824 bytes, a measure of data storage capacity (see megabyte).

kilobyte (Kb)

1 024 bytes, a measure of data storage capacity.

Licensed Partner

Any organisation that has entered into a formal licence agreement with Ordnance Survey to market map information or to incorporate map data with their application or service.

linear feature

Map feature in the form of a line (for example, river, road) that may or may not represent a real-world (existent) feature.

local origin

The local origin of rectangular coordinates is the south-west corner of the 1 km by 1 km National Grid square they identify.

map scale

The ratio between the extent of a feature on the map and its extent on the ground, normally expressed as a representative fraction, for example, 1:1250, 1:50 000 and so on.

megabyte (Mb)

1 048 576 bytes, a measure of data storage capacity (see gigabyte).

National Grid

The metric grid on the Transverse Mercator projection used by Ordnance Survey on all post-Second World War mapping to provide an unambiguous spatial reference in Great Britain for any place or entity, whatever the map scale.

northings

See rectangular coordinates.

Oracle®

The relational database management system used for the 1:50 000 Scale Gazetteer.

order

A request from a customer for the supply of map data. The scope of an order may be constrained by an agreement for a period licence service.

origin

The zero point in a system of rectangular coordinates.

pixel

In the VectorMap Local raster product a **pixel** is a single point represented by a square.

points

A pair of coordinates.

raster data

Attribute data expressed as an array of pixels, with spatial position implicit in the ordering of the pixels.

real-world object

The real-world feature represented by a feature, for example, a building, a fence, a wood.

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, a digitising table or a VDU screen).

stipple

Used to produce light or dark shading (for example, building/water fill); this is dependent on spacing of the dots – the denser the dots, the darker the effect.

string

A set of items that can be arranged into a sequence according to a rule.

supply format

The file format in which the data is supplied to the customer.

tag

Tags are unique numbers that are used for identifying specific information in TIFF files, for example, image width, image length, bits per sample, photo interpretation and resolution.

terminator

Character, or character string, or field, or record used to signal the end of a record, or section, or volume or database.

tile

A unit of map used to divide large areas into regular and more manageable sizes.

TIFF

TIFF is a tagged image file format-based file format for storing and interchanging raster images with the most recent version – 6.0 published in 1992.

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.

transfer medium

The physical medium on which digital data is transferred from one computer system to another. For example, compact disc.

UNIX®

An operating system that supports multitasking and is used by many work stations and mini computers.

update

The process of adding to and revising existing digital map data to take account of change.

volume

A physical unit of the transfer medium, that is a single disk, or a single DVD.

Annexe B Road abbreviations

This annexe gives the approved, shortened and special abbreviations for use with road names (both urban and rural).

It contains a list of items that are most likely to occur as the descriptive element within road names.

Combinations can be used, for example, SHIRLEY RD S (SHIRLEY ROAD SOUTH) OR N RD ROWNHAMS (NORTH ROAD ROWNHAMS).

Two priorities of shortened abbreviations are shown; however, every effort is made to incorporate the full name if possible.

Item	Shortened abbreviations (in priority of use)		Item	Shortened abbreviations (in priority of use)	
	1	2		1	2
ALLEY	AL		LEA	LE	
APPROACH	APP	AP	LOWER	LR	
ARCADE	ARC	AR	MEAD	ME	
AVENUE	AVE	AV	MEADOW	MDW	MW
BOULEVARD	BVD	BD	MEWS	MS	
BROADWAY	BDY	BY	MOUND	MD	
BROW	BR		MOUNT	MT	
BUILDINGS	BLDGS	BG	NORTH	N	
BY-PASS	BY-PS	B-P	ORCHARD	ORCH	OR
CAUSEWAY	CSWY	CW	PARADE	PAR	PD
CENTRE	CTR		PARK	PK	
CHASE	CHA	CH	PASS	PS	
CIRCLE	CIRC	CI	PASSAGE	PAS	PG
CIRCUS	CIR	CI	PATH	PA	
CLOSE	CL		PLACE	PL	
CORNER	CNR		PRECINCT	PREC	PT
COURT	CT		PROMENADE	PROM	PR
CRESCENT	CRES	CR	QUAY	QY	
CROFT	CFT	CF	RIDE	RI	
CROSS	CS		RIDGE	RDG	RG
CUT	CU		RISE	RS	
DALE	DL		ROAD	RD	
DRIVE	DR		ROUNDAABOUT	RBT	
DROVE	DRO	DV	ROW	RW	
EAST	E		SAINT	ST.	
EMBANKMENT	EMB	EM	SIDE	SD	
ESPLANADE	ESP	ES	SPUR	SP	
ESTATE	EST		SOUTH	S	
FIELD	FLD	FD	SQUARE	SQ	
FLY-OVER	FLY	F-O	STAIRS	STRS	SR
FOLLY	FO		STEPS	STPS	SP
GAP	GP		STRAND	STR	SD
GARDENS	GDNS	GD	STREET	ST	S
GATE	GT		TERRACE	TERR	TE
GREEN	GN		TRACK	TK	
GROVE	GR		VALE	VA	
HEIGHTS	HTS	HT	VIEW	VW	

Item	Shortened abbreviations (in priority of use)		Item	Shortened abbreviations (in priority of use)	
HILL	HL		VILLAS	VIL	VI
HOLLOW	HOL	HW	WAY	WY	
JUNCTION	JUNC	JN	WEST	W	
LANE	LA		WHARF	WHF	WF
LAWN	LWN	LN	YARD	YD	