

## PRODUCT DESCRIPTION

# Topographic web map View service, cache

DOCUMENT VERSION: 1.15

CONCERNING THE INTERFACE VERSION OF THE SERVICE: 1.1.0

*Figure 1. Section from Topographic web map View service, cache.*



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## I General description

Topographic web map View service, cache is one of the map and image viewing services provided by Lantmäteriet. The service displays information from Lantmäteriet's basic data layer with a harmonized cartography between scales.

The service delivers a high-performance background map at many simultaneous requests. Instead of creating a new image for each request, the service returns small pre-generated images in at fixed zoom levels.

Topographic web map View service, cache is very similar in content to the service Topographic web map View service, but has higher performance, slightly less up-to-date information, and presents the map information in fixed zoom levels. The text positioning is also slightly better in Topographic web map View service, cache. There text is more abundant and better placed because the text placement used for the printed map is more extensively utilized.

The service includes a layer of topographic map information that is presented prominently in colour and a layer presenting information in a toned-down grey scale.

### I.1 Content

Topographic web map View service contains a selection of topographic information from several of Lantmäteriet's products. For a detailed description of the content of each product, please refer to the product descriptions on [Lantmäteriet's website](#).

- Address points from the Real Property Register
- Topography 10 Download, vector
- Topography 50 Download, vector
- Topography 100 Download, vector
- Topography 250 Download, vector
- Topography 1M Download, vector
- GSD Map of Sweden 1:5 million
- Adjusted VectorMap, level 0 (a public global geographic database)

Partly the content varies depending on what scale it is displayed in. Currently the different map products are created in separate production lines. Since data is retrieved from different map products inconsistencies will occur, e.g., that a municipality boundary shifting in the map image between different scales. For presentation of content in different scale levels see chapter 3 and a separate document with the symbol legend.

### I.1.1 TOPOGRAPHIC WEB MAP

The layer contains topographic map information such as administrative division, buildings, facilities, regulations, roads, railways, mountain information, electricity transmission lines, land areas, water areas, water courses, contour lines, terrain shading, place names, informative text, and address numbers. The information is coloured to make it clearly visible.

Figure 2. Example image in scale 1:3 780 (SWEREF 99 TM).



Figure 3. Example image in scale 1:30 236 (SWEREF 99 TM).



Figure 4 Example image in scale 1:241 890 (SWEREF 99 TM).



### I.1.2 TOPOGRAPHIC WEB MAP, TONED-DOWN

The layer presents the topographic map information in a toned-down grey scale and is suitable to use as a background to other information that needs to stand out clearly.

Figure 5. Example image in scale 1:3 780 (SWEREF 99 TM).



Figure 6. Example image in scale 1:30 236 (SWEREF 99 TM).



Figure 7 Example image in scale 1:241 890 (SWEREF 99 TM).



## 1.2 Geographic coverage

Topographic web map View service, cache includes the entire Sweden. In the smallest scales, information for Northern Europe is included.

## 1.3 Coordinate system

Plane:

- SWEREF 99 TM (EPSG 3006)
- Web Mercator (EPSG 3857)

Height:

- RH 2000

Each layer is available in two coordinate systems. SWEREF 99 TM is developed for Sweden and is correct in terms of length and scale. Web Mercator is a standardized projection for world maps which enables to combine the map with other data from e.g., Google, Bing or OpenStreetMap.

Web Mercator should only be used for visualizations, not for analysis, as the projection is neither correct in terms of angle nor length. The projection errors are larger in the north than the south of Sweden.

The maximum resolution in SWEREF 99 TM is 0,5 m/pixel and in Web Mercator it is 1,19 m/pixel.

## 2 Quality description

Data capture, maintenance and data quality for the information displayed in the service vary depending on what product it comes from, i.e., the scale in which is displayed in (refer to tables in section 3.1). For a more complete description of quality refer to the products and product information on [Lantmäteriet's web site](#).

- [Topography 10 Download, vector](#)
- [Topography 50 Download, vector](#)
- [Topography 100 Download, vector](#)
- [Topography 250 Download, vector](#)
- [Topography 1M Download, vector](#)
- [GSD Map of Sweden 1:5 million](#)

## 2.1 Maintenance

### 2.1.1 MAINTENANCE AND UPDATE FREQUENCY

The information in the service is updated at different intervals depending on type of information and scale level. The timeliness of the information depends not only for updates in the data source, but also on the chosen seeding strategy in the service and whether the generated map image is cached from previous requests or if the image is retrieved with new information. A simplified description of the timeliness is that:

- The information in scale areas up to 1:20 000 is updated daily.
- The information in scale areas up to 1:20 000 is updated monthly.

## 3 Layout and plotting of data

Different products are the basis for information in different scale areas. The scale intervals are approximate and depend partly on the client used to display the map.

For examples on symbol legends in different scales, refer to a separate document.

### 3.1 Plotting in different scales

The table below describes the main principle for within which scale ranges the different products are used, in SWEREF 99 TM.

*Table 1. Scale range for plotting for each product.*

From scale	To scale	Product, with any selection
1:1 890	1:1 890	Address points from the Real Property Register
1:1 890	1:7 559	Topography 10 Download, vector
1:1 890	1:30 236	Topography 50 Download, vector
1:1 890	1:120 945	Topography 100 Download, vector
1:60 472	1:241 890	Topography 250 Download, vector
1:60 472	1:∞	Topography 1M Download, vector
1:483 780	1:7 774 472	Text from GSD Map of Sweden 1:5 millions
1:2 902 667	1:∞	Adjusted VectorMap

To obtain a sharp image, the map's fixed scale levels should be followed. Zooming to a scale between the fixed levels may result in a pixelated image, and symbols and text may not be displayed at their optimal size.

The table below describes the fixed scale levels in the service and how the different products is displayed at each level, in SWEREF 99 TM.

*Table 2. Scale range for plotting for each product and selection.*

Level	Scale	Resolution in the image corresponds to metres on the ground	Product	Selection of content
13	1:1 890	0,5	Topography 10 Download, vector	All information except for contours.
			Topography 50 Download, vector	Contours
12	1:3 780	1	Topography 10 Download, vector	All information except for contours.
			Topography 50 Download, vector	Contours
11	1:7 559	2	Topography 10 Download, vector	All information except for contours.
			Topography 50 Download, vector	Contours
10	1:15 118	4	Topography 50 Download, vector	All information.
9	1:30 236	8	Topography 50 Download, vector	All information.
8	1:60 472	16	Topography 100 Download, vector	All information except for contours.
			Topography 250 Download, vector	Contours
			-	Terrain shading



<b>Level</b>	<b>Scale</b>	<b>Resolution in the image corresponds to metres on the ground</b>	<b>Product</b>	<b>Selection of content</b>
7	1:120 945	32	Topography 250 Download, vector	All information, except for mountain information.
			Topography 100 Download, vector	Mountain information
			Topography 1M Download, vector	Some place names.
			-	Terrain shading
6	1:241 890	64	Topography 250 Download, vector	Regulations, facilities lines, runways
			Topography 1M Download, vector	All other information
5	1:483 780	128	Topography 1M Download, vector	All information
			GSD Map of Sweden 5m	Text
4	1:967 559	256	Topography 1M Download, vector	All information
			GSD Map of Sweden 5m	Text
3	1:1 935 118	512	Topography 1M Download, vector	All information
			GSD Map of Sweden 5m	Text
2	1:3 870 236	1024	Topography 1M Download, vector	All information

Level	Scale	Resolution in the image corresponds to metres on the ground	Product	Selection of content
			GSD Map of Sweden 5m	Text
			Adjusted VectorMap	Information outside Sweden's borders
1	1:7 774 472	2048	Topography 1M Download, vector	All information
			GSD Map of Sweden 5m	Text
			Adjusted VectorMap	Information outside Sweden's borders
0	1:15 480 945	4096	Topography 1M Download, vector	All information
			Adjusted VectorMap	Information outside Sweden's borders

The above presentation is a rough classification and there are details that do not follow the classification completely.

The table below describes the fixed zoom levels in the service, Web Mercator. The values are approximate and calculated assuming a resolution of 96 dpi in the service. The projection is not correct in terms of length and scale and the projection error increases towards north.

*Table 3. Scale levels and resolution in Web Mercator.*

Level	Scale	Approximate resolution in metre/pixel
12	1:4 497	1,2
11	1:9 033	2,4
10	1:18 066	4,8
9	1:36 118	9,6

Level	Scale	Approximate resolution in metre/pixel
8	1:72 235	19,1
7	1:144 471	38,2
6	1:288 941	76,4
5	1:577 883	152,9
4	1:1 155 765	305,8
3	1:2 311 531	611,5
2	1:4 623 062	1223,0
1	1:9 246 123	2446,0
0	1:18 492 247	4892,0

#### 4 List of changes

The table indicates in which version of the product description the change was made. The date indicates from which day the change is valid from.

*Tabell 4. Table of changes for the document.*

Version	Date	Changes from previous version
<b>1.14</b>	2023-02-01	<p>Reference to the road Map and Mountain Map changed to the new product Topography 100 Download, vector.</p> <p>Reference to the Overview Map changed to the new product Topography 250 Download, vector.</p> <p>Reference to the Sweden Map 1:1 million changed to the new product Topography Download, vector.</p> <p>Chapter 2.1.1 Maintenance frequency updated.</p> <p>Table 1 Scale range for plotting for each product is updated.</p> <p>Table 2 Scale range for plotting for each product and selection is updated.</p>

<b>Version</b>	<b>Date</b>	<b>Changes from previous version</b>
		Figures 1,4 and 7 are updated.
<b>1.13</b>	2022-09-01	References to the Terrain Map changed to the new product Topography 50 Download, vector. Table 2 Scale area for drawing for each product and selection is updated. Figures 3 and 6 are updated. Chapter 2.1.1 Maintenance frequency updated.
<b>1.12</b>	2021-10-01	References to the Real Property Map changed to the new product Topography 10 Download, vector. Example images updated due to changes in style.
<b>1.11</b>	2019-04-02	Links updated.
<b>1.10</b>	2019-03-27	The text about maintenance frequency in section 2.2.1 has been updated. Clarification of the text in chapter 3.1. The Artic circle has been added. Limestone bog, peatery and shallow soil on flat limestone have been removed. Adjustment of content in the scale levels for WebMercator has been done.
<b>1.9</b>	2018-09-14	The number of scale levels in Web Mercator has decreased from 17 to 13 in the table in section 3.1.
<b>1.8</b>	2018-06-29	The order of axis in the service has changed from E, N to N, E.
<b>1.7</b>	2018-06-29	A layer with toned-down information has been added to the service. The service is now also available in the coordinate system Web Mercator.

Version	Date	Changes from previous version
1.6	2017-09-01	Information about quality in section 2. Quality description has been clarified.
1.5	2017-01-17	Information about GSD Locality, which has expired as a product, has been removed from the text.  Cartographic changes in the service: <ul style="list-style-type: none"> <li>• Snowmobile route information has received a new style.</li> </ul>
1.4	2016-09-01	A clarification regarding inaccuracies in the service between various scales has been added under Content.
1.3	2016-01-01	Cartographic changes in the service: <ul style="list-style-type: none"> <li>• Breakers and depth values are only shown in scale 1:1 - 1:15 000.</li> <li>• The service is supplemented with mountain information in scale 1:15 000 – 1:120 000.</li> </ul>
1.2	2015-02-17	Cartographic changes in the service: <ul style="list-style-type: none"> <li>• Adjustment have been made to display Sami characters correctly in the text.</li> <li>• More street names have become visible by using a dynamic method of adapting names based on the map's section.</li> <li>• In the selection of address numbers, a reprioritization is now made based on the current address, so that the corner property receives the address number that applies.</li> <li>• Hiking trails are placed over roads and made transparent so that trail markers stand out.</li> <li>• Tunnels are given a new thinner style and are always placed over all roads and railways. Tunnel for cycle paths is included and the same style is used as for all other tunnels.</li> <li>• In larger scales railways now have a slightly narrower style. In smaller scales</li> </ul>

Version	Date	Changes from previous version
		<p>railway have the same style as in other scales.</p> <ul style="list-style-type: none"> <li>• Buildings have been given a new style where both building types and colours have been adjusted.</li> </ul>
<b>1.1</b>	2013-09-17	The content is adjusted to refer to the service Topographic web map View service. An incorrect sentence in paragraph 1 corrected. Logotype exchanged.
<b>1.0</b>	2013-01-15	Established version.