

Calculating Line Lengths and Statistics

QGIS Tutorials and Tips



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QGISは、点、線、面のベクトルデータと、写真や衛星画像などのラスターデータを扱うことができます。また、これらのデータを加工・分析することもできます。

例えば、地図上の特定の領域を指定し、その面積を計算したり、異なる属性を持つ要素をフィルタリングしたりすることができます。

さらに、QGISには****Field Calculator****というツールがあり、データのフィールド（属性）に対して数値的な計算を行うことができます。

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- **Geographic Coordinate System (GCS)**
- **Projected Coordinate Reference System (CRS)**
- **Geographic Coordinate System (GCS)**

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Natural Earth
 <<http://www.naturalearthdata.com/downloads/10m-cultural-vectors/railroads/>> Earth
 North America supplement <http://www.naturalearthdata.com/http://www.naturalearthdata.com/download/10m/cultural/ne_10m_railroads_north_america.zip>

□□□ □□ [NATURALEARTH]

1. `menuselection: `Layer --> Add Vector Layer``.



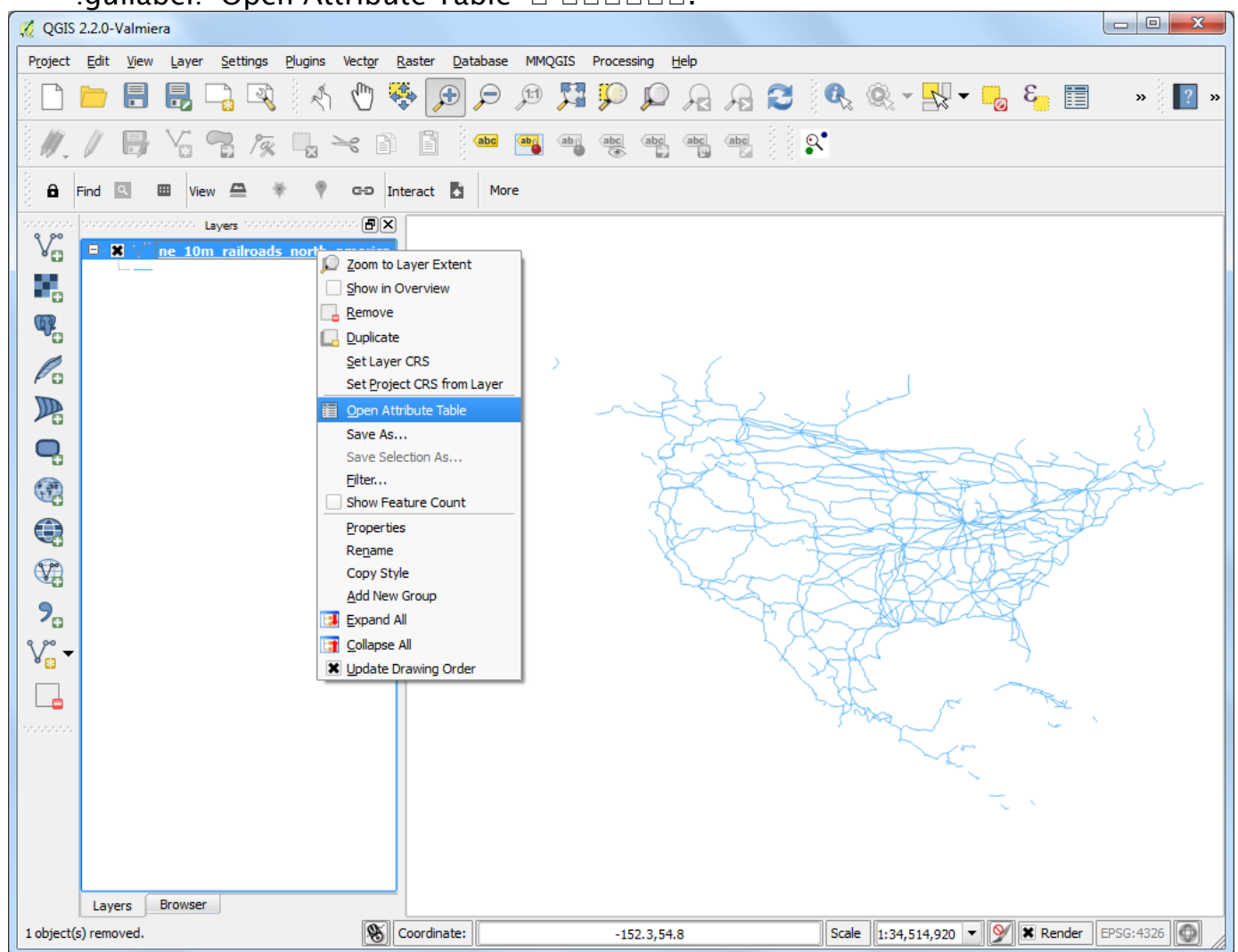
2. ``ne_10m_railroads_north_america.zip`` □□□ □□□ :guilabel: `OK` □ □□□□□.



3. In the Select layers to add... dialog, choose *ne_10m_railroads_north_america.shp* layer.



4. 00 0000 0000 000000 00 00 0000 0000 00 00 0000 0000. 0 000000 0000 00 0000 0000 0000, 000000 00 0000 0000 0000. 000000 0000 0000 0000 0000 :guilabel: `Open Attribute Table` 0 0000000.



- [illegible]

Attribute table - ne_10m_railroads_north_america :: Features total: 1127, filtered: 1127, selected: 0

	scalerank	featurecla	sov_a3	uident	add	natrscale	continent
0	8	Railroad	USA	1506	0	0	North America
1	9	Railroad	USA	1606	1	5	North America
2	8	Railroad	USA	1706	0	0	North America
3	8	Railroad	USA	1806	0	0	North America
4	8	Railroad	USA	1906	0	0	North America
5	8	Railroad	USA	2006	0	0	North America
6	8	Railroad	USA	2106	0	0	North America
7	9	Railroad	USA	2206	1	5	North America
8	8	Railroad	USA	2306	0	0	North America
9	8	Railroad	USA	2406	0	0	North America
10	8	Railroad	USA	2506	0	0	North America
11	8	Railroad	USA	2606	0	0	North America
12	8	Railroad	USA	2706	0	0	North America
13	8	Railroad	USA	2806	0	0	North America
14	9	Railroad	USA	2906	1	5	North America
15	9	Railroad	USA	3006	1	5	North America
16	8	Railroad	USA	3106	0	0	North America
17	8	Railroad	USA	3206	0	0	North America
18	8	Railroad	USA	3306	0	0	North America
19	8	Railroad	USA	3506	0	0	North America
20	8	Railroad	USA	3606	0	0	North America
21	8	Railroad	USA	3706	0	0	North America
22	8	Railroad	USA	3806	0	0	North America
23	9	Railroad	USA	3906	1	5	North America

Show All Features

6. ☐ ☐ ☐ ☐ Attribute Table` ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ :guilabel:`Select features using an expression ☐ ☐ ☐ ☐ ☐.

Attribute table - ne_10m_railroads_north_america :: Features total: 1127, filtered: 1127, selected: 0



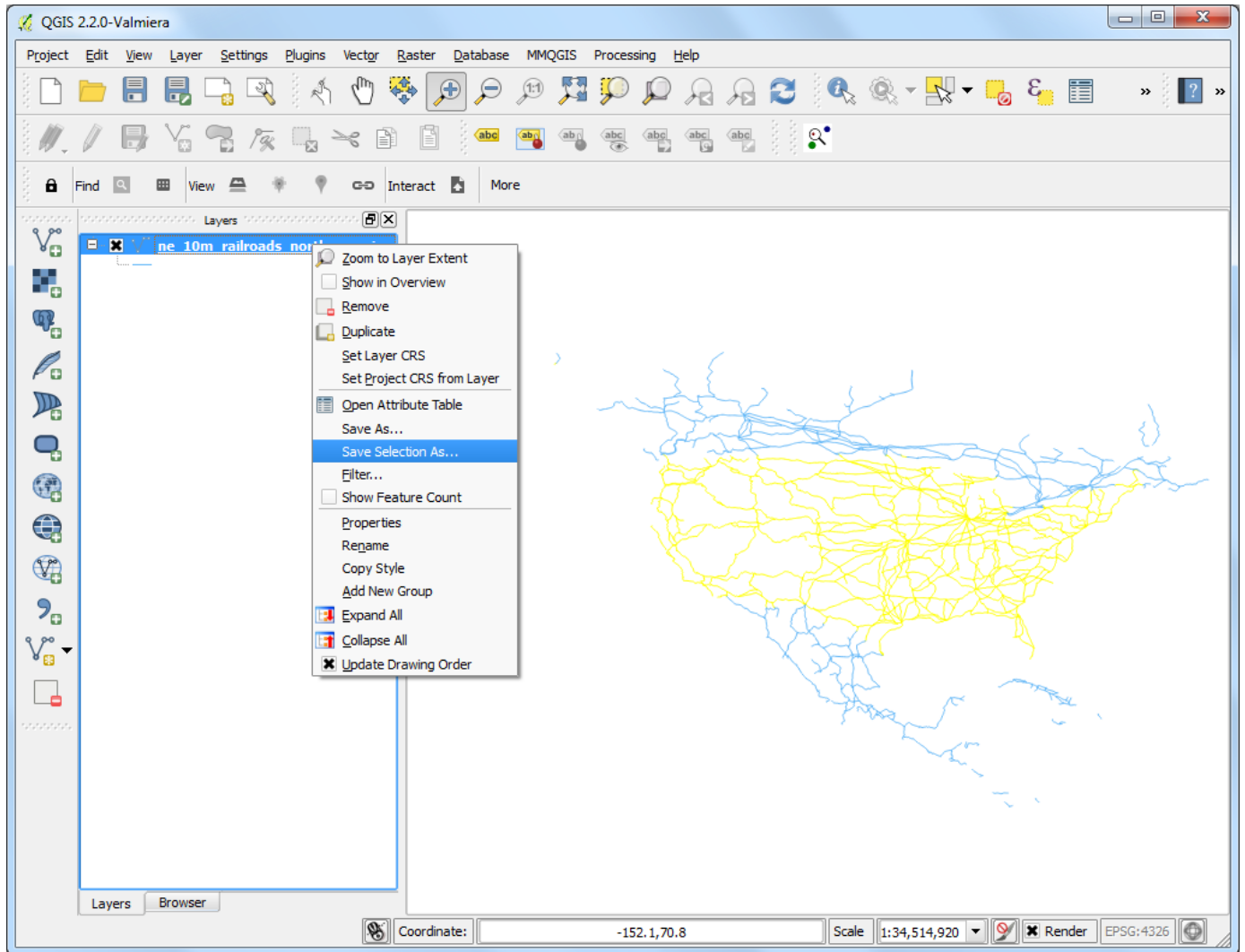
	scalerank	Select features using an expression	uident	add	natrscale	continent
0	8	Railroad	USA	1506	0	0 North America
1	9	Railroad	USA	1606	1	5 North America
2	8	Railroad	USA	1706	0	0 North America
3	8	Railroad	USA	1806	0	0 North America
4	8	Railroad	USA	1906	0	0 North America
5	8	Railroad	USA	2006	0	0 North America
6	8	Railroad	USA	2106	0	0 North America
7	9	Railroad	USA	2206	1	5 North America
8	8	Railroad	USA	2306	0	0 North America
9	8	Railroad	USA	2406	0	0 North America
10	8	Railroad	USA	2506	0	0 North America
11	8	Railroad	USA	2606	0	0 North America
12	8	Railroad	USA	2706	0	0 North America
13	8	Railroad	USA	2806	0	0 North America
14	9	Railroad	USA	2906	1	5 North America
15	9	Railroad	USA	3006	1	5 North America
16	8	Railroad	USA	3106	0	0 North America
17	8	Railroad	USA	3206	0	0 North America
18	8	Railroad	USA	3306	0	0 North America
19	8	Railroad	USA	3506	0	0 North America
20	8	Railroad	USA	3606	0	0 North America
21	8	Railroad	USA	3706	0	0 North America
22	8	Railroad	USA	3806	0	0 North America
23	9	Railroad	USA	3906	1	5 North America

Show All Features

7. Select By Expression dialog box. Functions list Fields and Values sov_a3, Expression: "sov_a3" = 'USA', Select, Close.



8. Back in the main QGIS window, you will see that all lines that fall in USA are selected and appear in yellow.



10. `guiabel: `Browse`` `usa_railroads.shp``
`CRS`` `guiabel: `Browse``

Note

CRS `EPSG:4326`
`(CRS)` `**degrees**`
`square degrees**` `**meters` `**feet**`



11. :guilabel: Filter`
 :guilabel: north america equ`
 :guilabel: North_America_Equidistant_Conic EPSG:102010`
 :guilabel: OK`



12. □ □□□ □□ □□ □□□ Save vector layer as... □□□□□□ □□ □□ □□ □□
:guilabel: `Add saved file to map` □ □□□ :guilabel: `OK` □ □□□□.



13. □□ □□□□ □□□ □□□ □□□□ □□□
 usa_railroads``■■■■■ QGIS ■■■■■. ■■■■ ``ne_10m_railroads_north_america
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14. `usa_railroads`` 表 表 表 表 表 表 表 :guilabel: `Open Attribute Table` 表 表 表 表 表.



15. `Toggle editing` `Open field calculator`

Attribute table - usa_railroads :: Features total: 752, filtered: 752, selected: 0



	scalerank	featuredata	sov_a3	uident		continent
0	8	Railroad	USA	1506	0	North America
1	9	Railroad	USA	1606	1	North America
2	8	Railroad	USA	1706	0	North America
3	8	Railroad	USA	1806	0	North America
4	8	Railroad	USA	1906	0	North America
5	8	Railroad	USA	2006	0	North America
6	8	Railroad	USA	2106	0	North America
7	9	Railroad	USA	2206	1	North America
8	8	Railroad	USA	2306	0	North America
9	8	Railroad	USA	2406	0	North America
10	8	Railroad	USA	2506	0	North America
11	8	Railroad	USA	2606	0	North America
12	8	Railroad	USA	2706	0	North America
13	8	Railroad	USA	2806	0	North America
14	9	Railroad	USA	2906	1	North America
15	9	Railroad	USA	3006	1	North America
16	8	Railroad	USA	3106	0	North America
17	8	Railroad	USA	3206	0	North America
18	8	Railroad	USA	3306	0	North America
19	8	Railroad	USA	3506	0	North America
20	8	Railroad	USA	3606	0	North America
21	8	Railroad	USA	3706	0	North America
22	8	Railroad	USA	3806	0	North America
23	9	Railroad	USA	3906	1	North America

Show All Features

16. `Field Calculator` `Create a new field` `Output field name` `**length_km**` `Output field type` `Decimal number (real)` `Precision` `**2**` `Function list` `Geometry` `$length` `Expression` `$length / 1000` `CRS` `meters` `**km**` `OK`



17. 在 Attribute Table 中，单击 `length_km` 列，单击 `Toggle editing` 按钮。

Attribute table - usa_railroads :: Features total: 752, filtered: 752, selected: 0



	scalerank	featuredata	sov_a3	uident	add	natrscale	continent	length_km
0	8	Railroad	USA	1506	0	0	North America	637.07
1	9	Railroad	USA	1606	1	5	North America	16.27
2	8	Railroad	USA	1706	0	0	North America	96.22
3	8	Railroad	USA	1806	0	0	North America	20.15
4	8	Railroad	USA	1906	0	0	North America	0.01
5	8	Railroad	USA	2006	0	0	North America	79.95
6	8	Railroad	USA	2106	0	0	North America	67.00
7	9	Railroad	USA	2206	1	5	North America	196.45
8	8	Railroad	USA	2306	0	0	North America	60.61
9	8	Railroad	USA	2406	0	0	North America	20.03
10	8	Railroad	USA	2506	0	0	North America	147.21
11	8	Railroad	USA	2606	0	0	North America	68.33
12	8	Railroad	USA	2706	0	0	North America	1.62
13	8	Railroad	USA	2806	0	0	North America	4.34
14	9	Railroad	USA	2906	1	5	North America	60.92
15	9	Railroad	USA	3006	1	5	North America	157.26
16	8	Railroad	USA	3106	0	0	North America	131.39
17	8	Railroad	USA	3206	0	0	North America	58.84
18	8	Railroad	USA	3306	0	0	North America	432.74
19	8	Railroad	USA	3506	0	0	North America	29.55
20	8	Railroad	USA	3606	0	0	North America	94.90
21	8	Railroad	USA	3706	0	0	North America	577.78
22	8	Railroad	USA	3806	0	0	North America	223.04
23	9	Railroad	USA	3906	1	5	North America	143.94

Show All Features

18. 在 QGIS 中打开 'usa_railroads' 属性表。在 'length_km' 列上右键单击，选择 'Statistics'。在弹出的对话框中，选择 'Basic Statistics'。在 'Statistics for' 下拉菜单中，选择 'length_km'。单击 'OK'。在弹出的窗口中，查看 'Total' 统计值。在 'Statistics for' 下拉菜单中，选择 'Vector'。单击 'OK'。在弹出的窗口中，查看 'Basic Statistics' 统计值。

Basics statistics

Input Vector Layer
usa_railroads

☐ Use only selected features

Target field
length_km

Statistics output

Parameter	Value
Mean	127.751569149
StdDev	125.80562595
Sum	96069.18
Min	0.01
Max	936.6
N	752.0
CV	0.984767755...
Number of unique values	743

Press Ctrl+C to copy results to the clipboard

0% OK Close