

# Calculating Line Lengths and Statistics

QGIS Tutorials and Tips



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- □□□□□□ □□□ □□□(Projected Coordinate Reference System, CRS)□ □□□ □ □□.
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`Natural Earth  
<<http://www.naturalearthdata.com/downloads/10m-cultural-vectors/railroads/>>`\_□□  
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For convenience, you may directly download a copy of the dataset from the link below:

[ne\\_10m\\_railroads\\_north\\_america..zip](#)

□□□ □□ [NATURALEARTH]

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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.



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

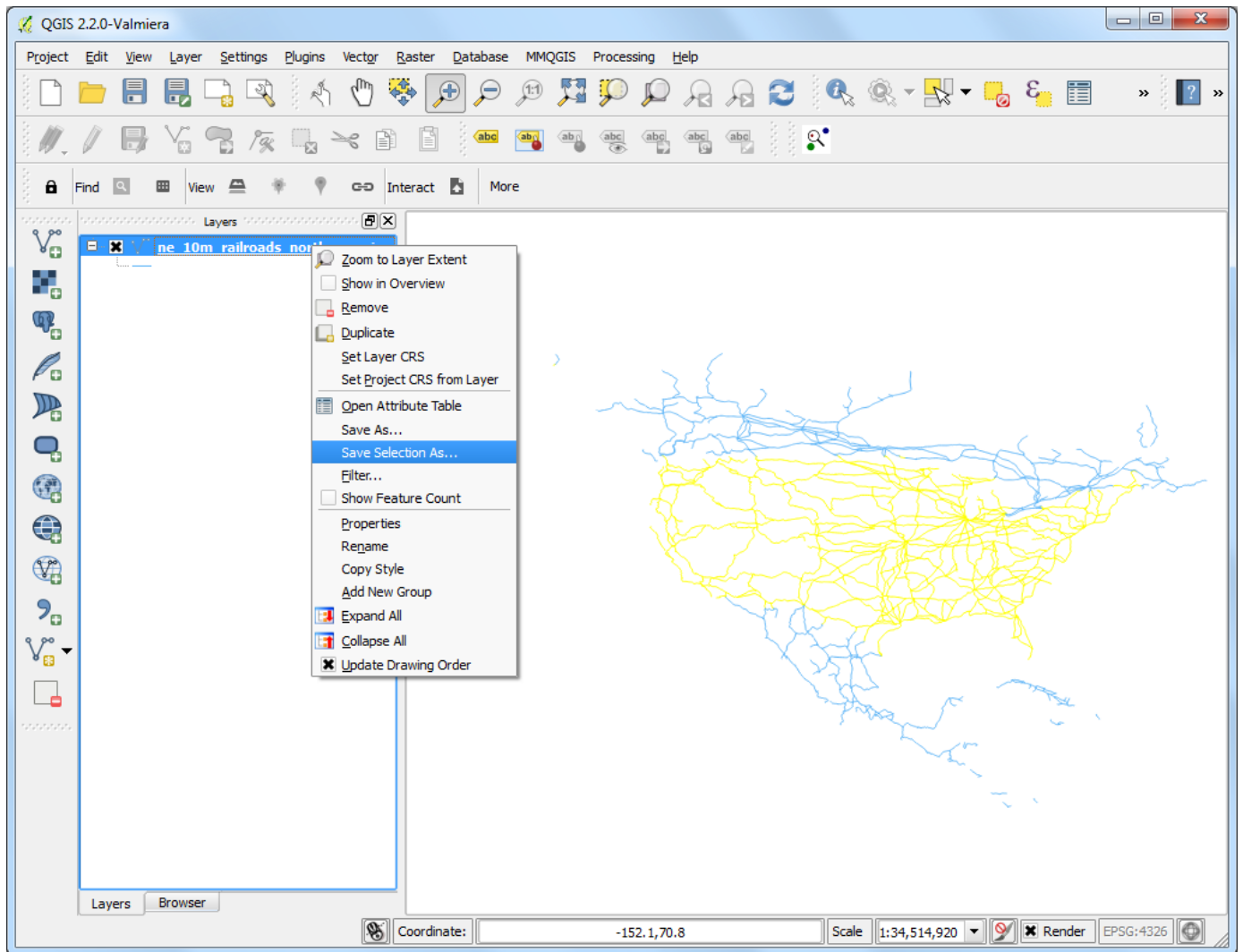
Show All Features

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` `**degrees**`, `square degrees**` `**meters` `**feet**`





11. :guilabel: Filter` :guilabel: north america equ` :guilabel: CRS`  
: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`` 〇〇〇〇 〇〇〇 〇〇〇 〇〇〇〇 〇〇 〇〇〇 〇〇 :guilabel: ``Open Attribute Table`` 〇 〇〇〇〇〇.



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 编辑 按钮 :guilabel:`length\_km` 单击 编辑 按钮。  
 单击 :guilabel:`Toggle editing` 按钮 单击 编辑 按钮 单击 编辑 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 'Total'。在弹出的对话框中，选择 'Basic Statistics'。在 'Basic Statistics' 对话框中，选择 'Vector'。在 'Analysis Tools' 对话框中，选择 'Basic Statistics'。





