



Point to Point Routing in RouteXL

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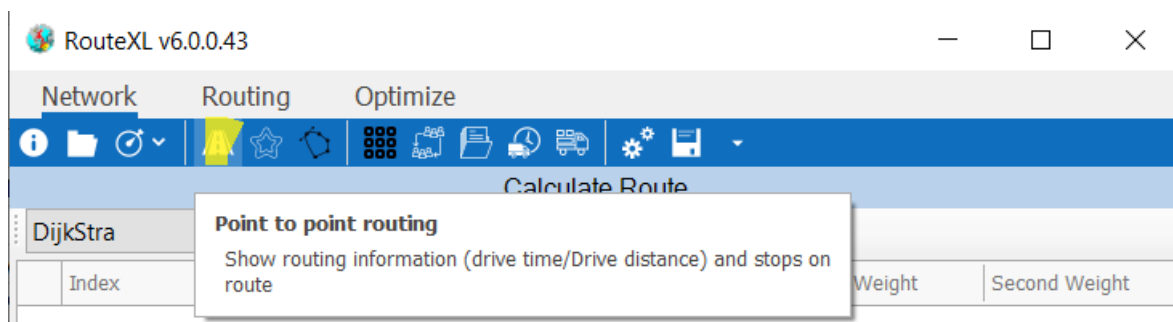
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RouteXL

RouteXL is an add-in to SpatialXL that allows optimised routing, transportation scheduling and high-speed bulk routing operations.

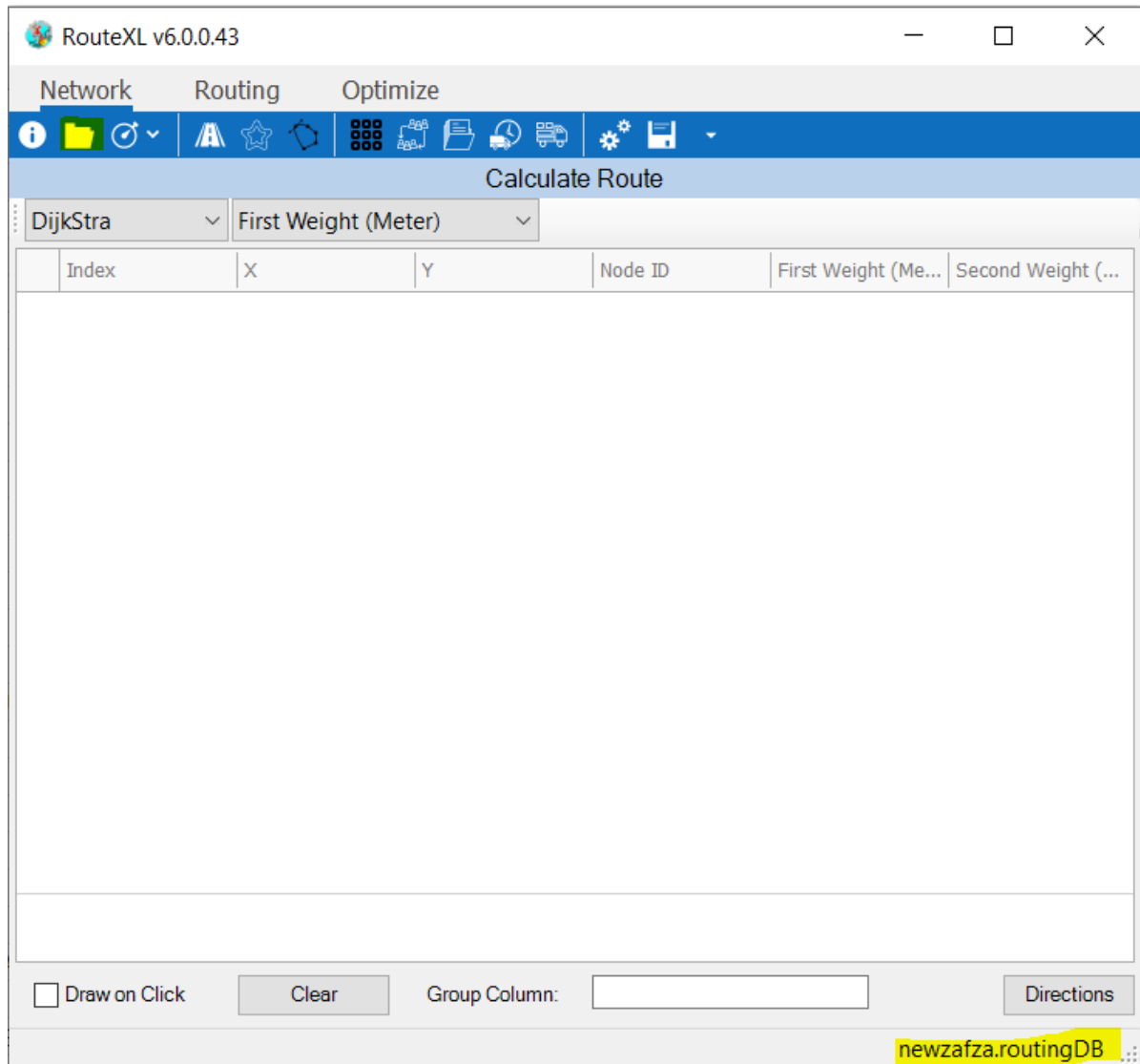


Point to Point Routing



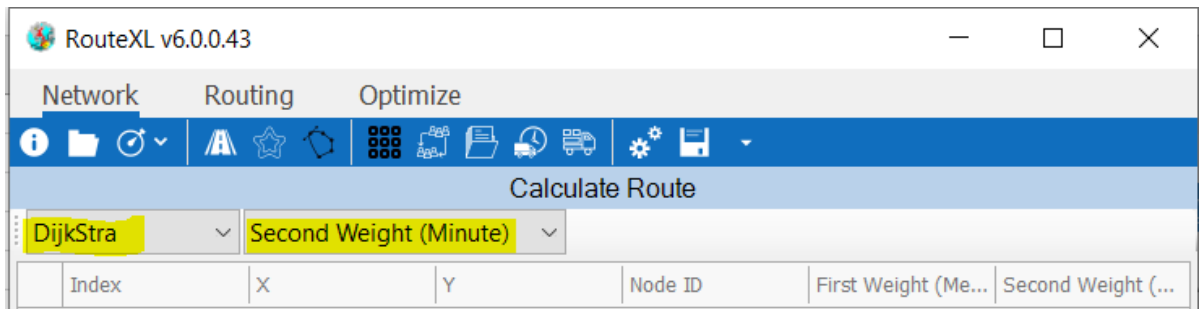
How to set up your data

Load your Routing Network by browsing to your .routingDB file. Your Routing Network will be displayed in the bottom right corner of your RouteXL window. I loaded **newzafza.routingDB** which is the South African Routing Network.



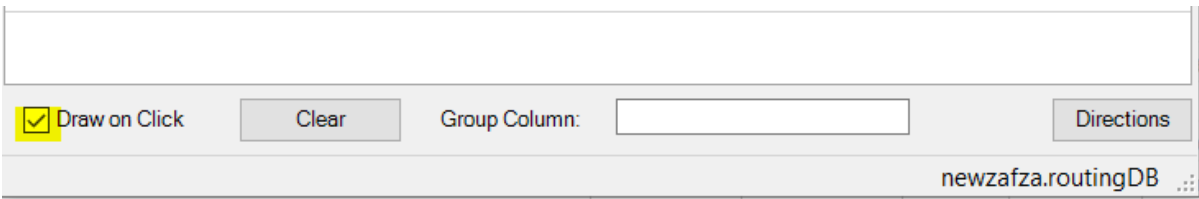
DijkStra above is the default routing algorithm.

You can either optimize your route by First Weight (Meter) or Second Weight (Minute). I have chosen Second Weight (Minute).

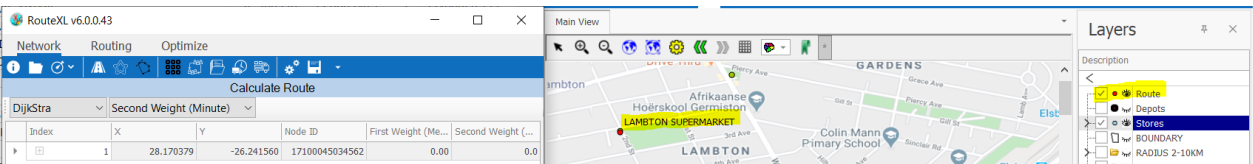


Inputting your data

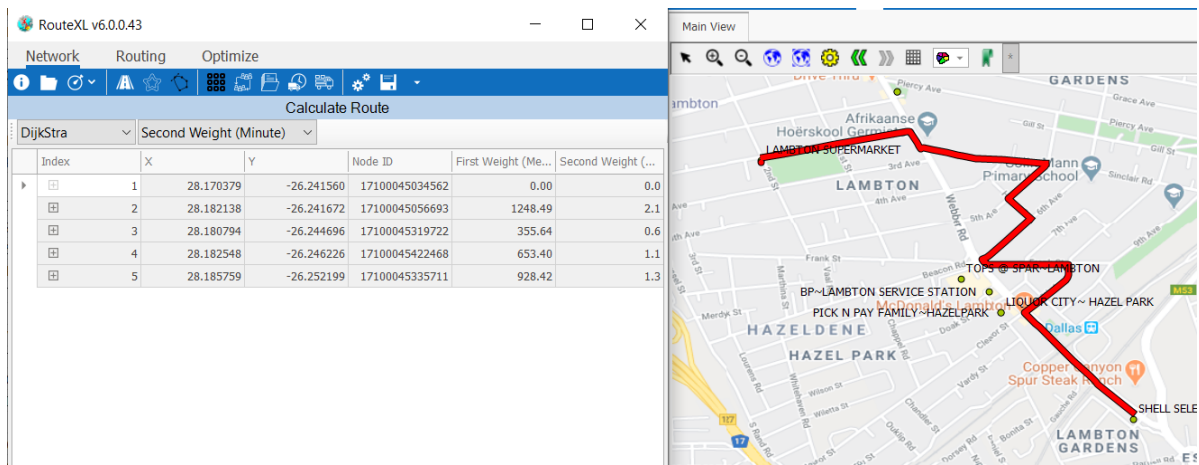
You have an option of **Draw on Click**. Make sure it is ticked on.



Select your first point by clicking on any area on your map you would like to start to draw your route from – I chose from **Lambton Supermarket**. Your point on your map will be displayed in red. A layer **Route** has also been added to your **Layer Description**.



Continue clicking until your desired route is drawn.



Point to Point Routing User Guide

Alternatively, you can select data from your Excel spreadsheet that you would like to route in the sequence that it is in the rows. (There is also an option to route your data in terms of groups which I've used in this example.)

Type in the **Group Column** name first in the RouteXL window, otherwise leave it blank if you are not grouping.

☐ Draw on Click

Clear

Group Column:

Simply copy and paste this data into your RouteXL window.

ID	NAME	LONGITUDE	LATITUDE	DEPOTS	CLUSTER1	GROUP
136	ALBERTON HYPER LIQUOR	28.122200	-26.272800	Depot1	9	A
138	ALBERTON WHOLESALERS	28.122167	-26.270050	Depot1	11	A
139	BP~GROBLER SERVICE STATION	28.122770	-26.276130	Depot1	9	A
140	BP EXPRESS~RANDHART	28.194684	-26.337667	Depot2	13	A
141	BRACKENDOWNS LIQUOR STORE	28.194684	-26.337667	Depot2	13	A
142	CALTEX~HENNICO SERVICE STATION	28.124850	-26.260540	Depot2	15	A
143	CALTEX~FLORENTIA MOTORS	28.135400	-26.263000	Depot2	17	A
144	CALTEX STARMART~STAR SERVICES	28.112600	-26.340280	Depot1	2	A
145	NUNOS CONVENIENCE STORE	28.115820	-26.264900	Depot1	12	A
146	CHECKERS~ALBERTON CITY	28.112800	-26.254500	Depot1	12	B
148	CALTEX~COYS SERVICE STATION	28.126640	-26.263104	Depot2	14	B
149	DAILY CONVENIENT STORE	28.127100	-26.261400	Depot2	14	B
150	ENGEN QUICK SHOP~BRACKENTEN MOTORS	28.086900	-26.321800	Depot1	1	B
152	ENGEN QUICK SHOP~JACQUELINE SERVICE STATION	28.115767	-26.296617	Depot1	5	B
153	ENGEN QUICK SHOP~KRITZINGER SERVICE STATION	28.147534	-26.264817	Depot2	17	B
154	ENGEN QUICK SHOP~NEW MARKET SERVICE STATION	28.122300	-26.272000	Depot1	9	B
155	ENGEN QUICK SHOP~NEW REDRUTH	28.127140	-26.272440	Depot2	14	B
156	ENGEN QUICK SHOP~VERWOERDPARK SERVICE STATION	28.144480	-26.273980	Depot2	13	B
157	ENGEN QUICK SHOP~VILLAGE MOTORS	28.106320	-26.309980	Depot1	3	B

RouteXL v6.0.0.43

Network Routing Optimize

Calculate Route

Dijkstra Second Weight (Minute)

	Index	X	Y	Node ID	First Weight (Meter)	Second Weight (Minute)
▶	1	28.122200	-26.272800	17100045205141	0.00	0.0
⊕	2	28.122167	-26.270050	17100045274352	585.64	0.8
⊕	3	28.122770	-26.276130	17100044957367	837.07	1.2
⊕	4	28.194684	-26.337667	17100045256974	13744.39	13.0
⊕	5	28.194684	-26.337667	17100045256974	0.00	0.0
⊕	6	28.124850	-26.260540	17100045165242	13624.00	13.0
⊕	7	28.135400	-26.263000	17100045324438	1410.22	2.0
⊕	8	28.112600	-26.340280	17100045150202	10236.00	13.0
⊕	9	28.115820	-26.264900	17100045208366	9545.58	11.4
⊕	10	28.112800	-26.254500	17100046161098	0.00	0.0
⊕	11	28.126640	-26.263104	17100045257530	2154.26	2.4
⊕	12	28.127100	-26.261400	17100045129256	193.32	0.3
⊕	13	28.086900	-26.321800	17100045033162	9296.89	11.1
⊕	14	28.115767	-26.296617	17100045080684	4986.56	6.3
⊕	15	28.147534	-26.264817	17100045299310	5923.50	8.2

☐ Draw on Click

Clear

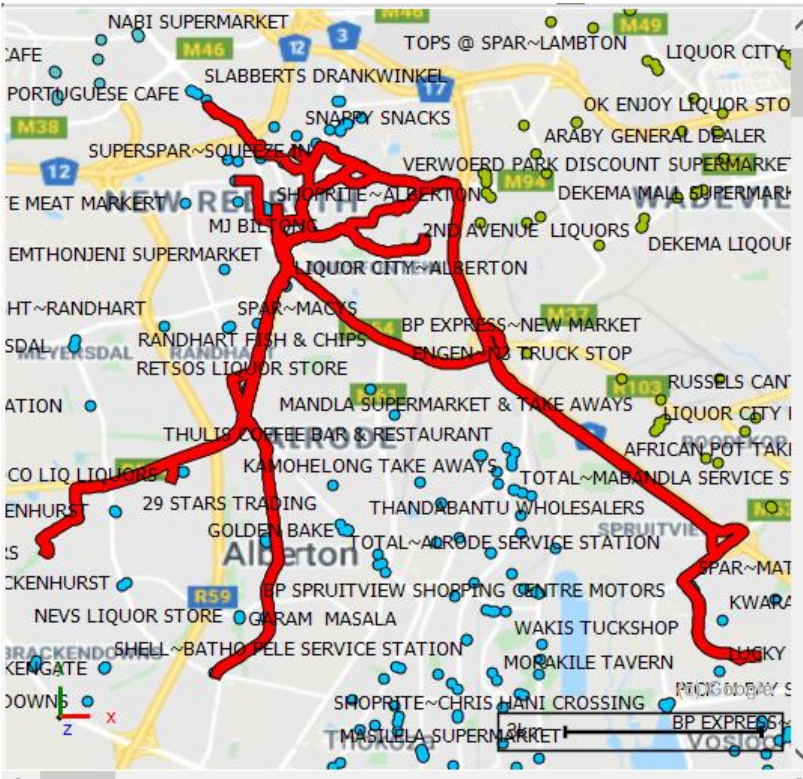
Group Column:

Directions

Routed in 78ms

newzafza.routingDB

Your routes again will be displayed on your map.



Understanding your data

RouteXL v6.0.0.43

NetworkRoutingOptimize

Calculate Route

DijkStraSecond Weight (Minute)

	Index	X	Y	Node ID	First Weight (Met...	Second Weight (M...
▶	1	28.122200	-26.272800	17100045205141	0.00	0.0

This is the first point that is selected on your map from **Draw on Click**, or the first point that is in the data you copied and pasted from your Excel worksheet.

RouteXL v6.0.0.43

NetworkRoutingOptimize

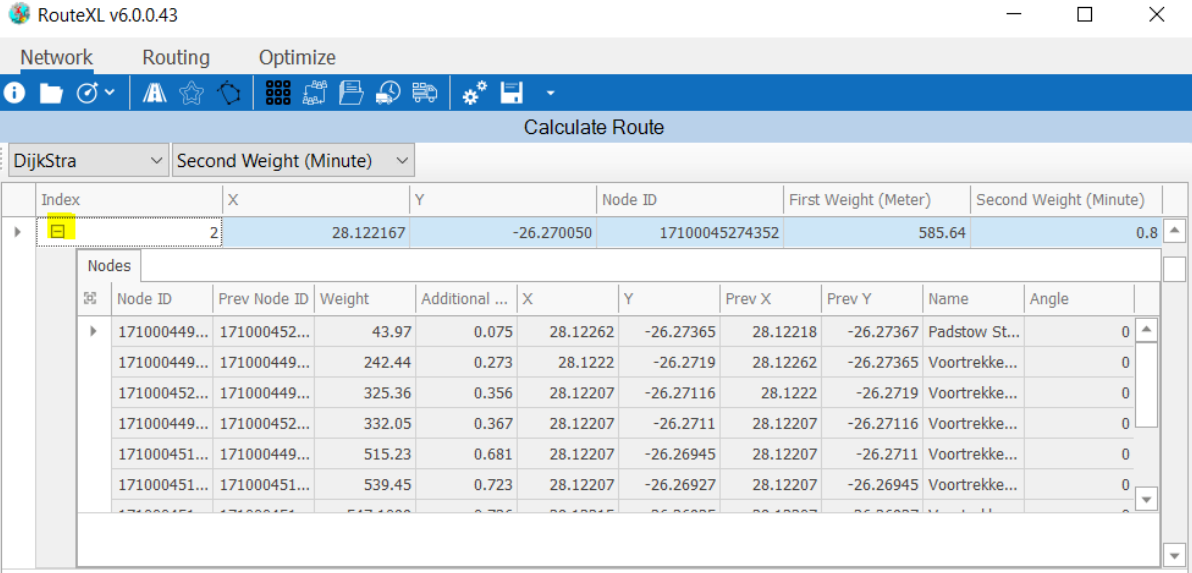
Calculate Route

DijkStraSecond Weight (Minute)

	Index	X	Y	Node ID	First Weight (Meter)	Second Weight (Minute)
▶	1	28.122200	-26.272800	17100045205141	0.00	0.0
	2	28.122167	-26.270050	17100045274352	585.64	0.8
	3	28.122770	-26.276130	17100044957367	837.07	1.2
	4	28.194684	-26.337667	17100045256974	13744.39	13.0

Point to Point Routing User Guide

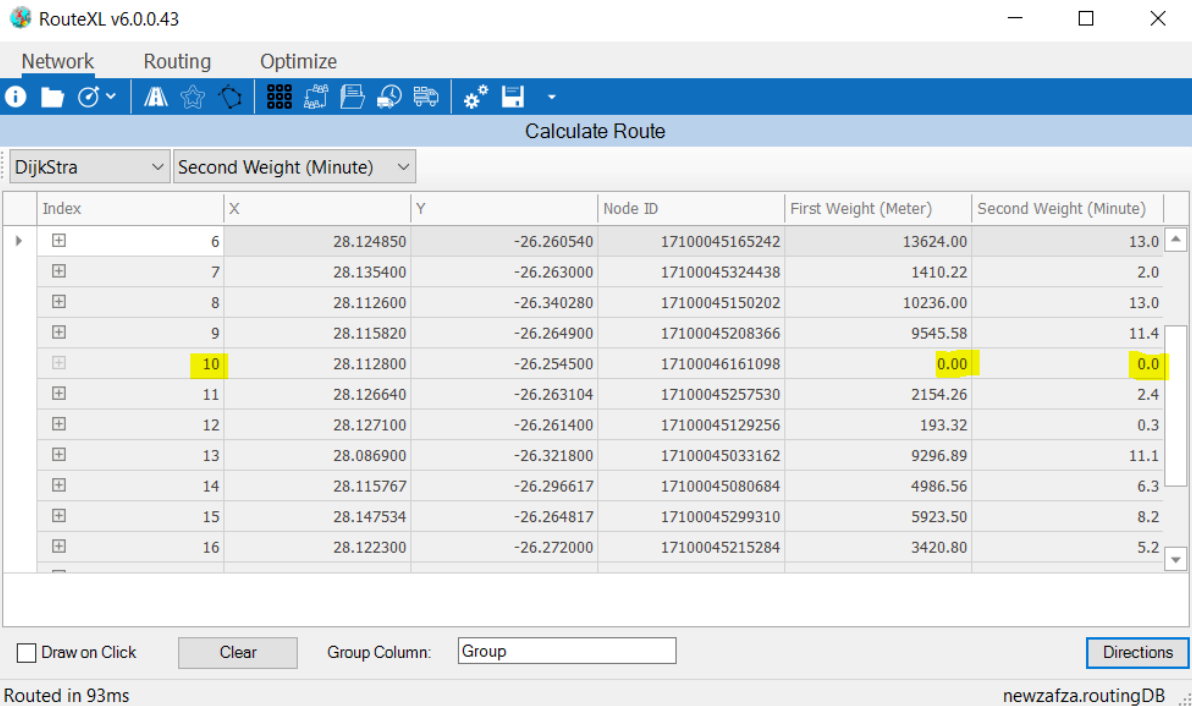
The subsequent **Indexes** are each separate click that is made on your map or next points in your rows of data that has been copied from your Excel worksheet. You can see the distance (**First Weight**) and time (**Second Weight**) from each subsequent point.



Index	X	Y	Node ID	First Weight (Meter)	Second Weight (Minute)
2	28.122167	-26.270050	17100045274352	585.64	0.8

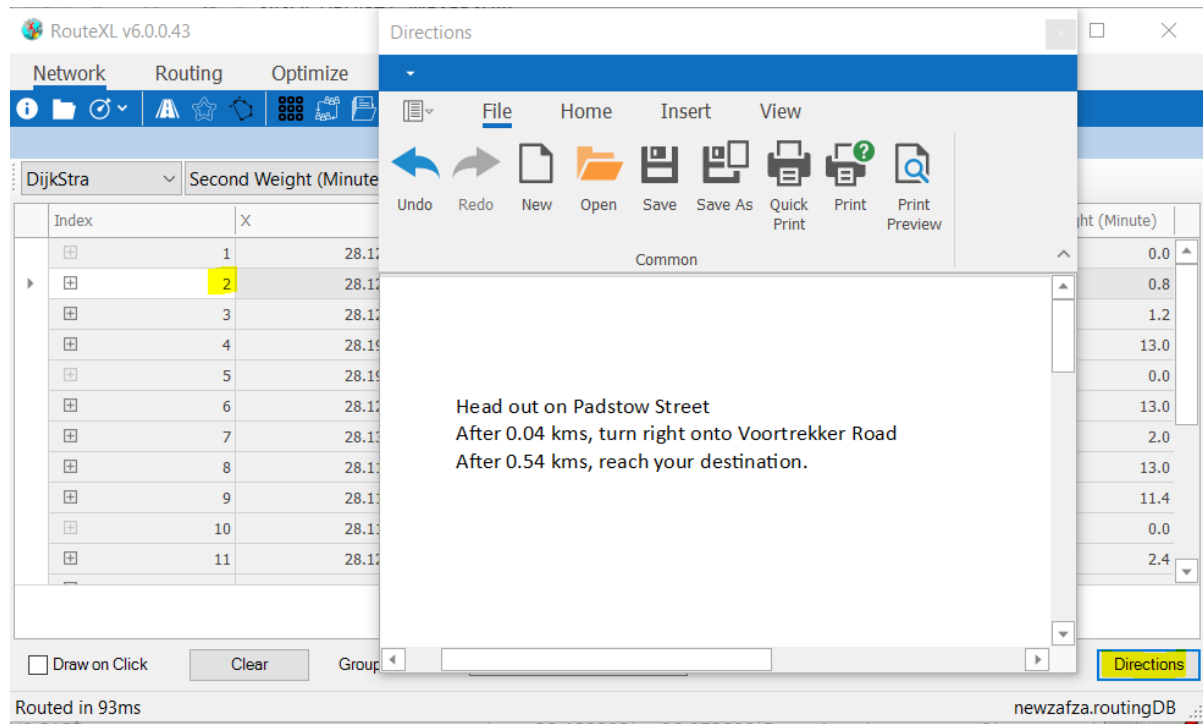
Node ID	Prev Node ID	Weight	Additional ...	X	Y	Prev X	Prev Y	Name	Angle
171000449...	171000452...	43.97	0.075	28.12262	-26.27365	28.12218	-26.27367	Padstow St...	0
171000449...	171000449...	242.44	0.273	28.1222	-26.2719	28.12262	-26.27365	Voortrekke...	0
171000452...	171000449...	325.36	0.356	28.12207	-26.27116	28.1222	-26.2719	Voortrekke...	0
171000449...	171000452...	332.05	0.367	28.12207	-26.2711	28.12207	-26.27116	Voortrekke...	0
171000451...	171000449...	515.23	0.681	28.12207	-26.26945	28.12207	-26.2711	Voortrekke...	0
171000451...	171000451...	539.45	0.723	28.12207	-26.26927	28.12207	-26.26945	Voortrekke...	0

Expand an **Index** by clicking the plus symbol to the left of it. In this case in **Index 2** above there is a minus symbol because I have expanded it. You will see all the **Nodes** along this specific route with attribute information.

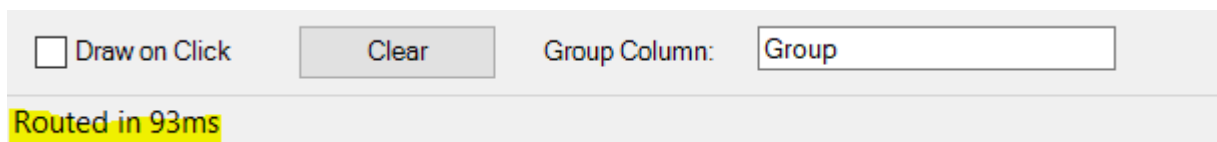


Index	X	Y	Node ID	First Weight (Meter)	Second Weight (Minute)
6	28.124850	-26.260540	17100045165242	13624.00	13.0
7	28.135400	-26.263000	17100045324438	1410.22	2.0
8	28.112600	-26.340280	17100045150202	10236.00	13.0
9	28.115820	-26.264900	17100045208366	9545.58	11.4
10	28.112800	-26.254500	17100046161098	0.00	0.0
11	28.126640	-26.263104	17100045257530	2154.26	2.4
12	28.127100	-26.261400	17100045129256	193.32	0.3
13	28.086900	-26.321800	17100045033162	9296.89	11.1
14	28.115767	-26.296617	17100045080684	4986.56	6.3
15	28.147534	-26.264817	17100045299310	5923.50	8.2
16	28.122300	-26.272000	17100045215284	3420.80	5.2

If you have grouped your routes as I have you will see this evident in your RouteXL window. All **Indexes** from **Index** to **Index** there are times and distances. From **Index** 10 above, your next group starts again from 0 time and distance then onto the next **Indexes** with the appropriate times and distances.

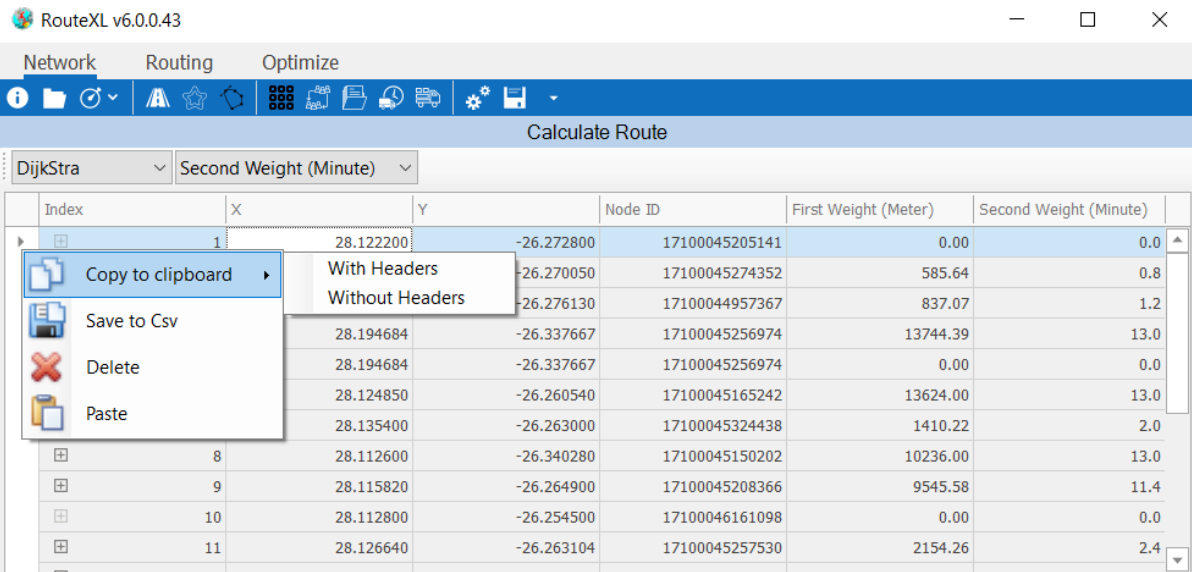


You can see the directions for each route by selecting an **Index**, then clicking **Directions**. You can copy and paste this data etc. if needed.



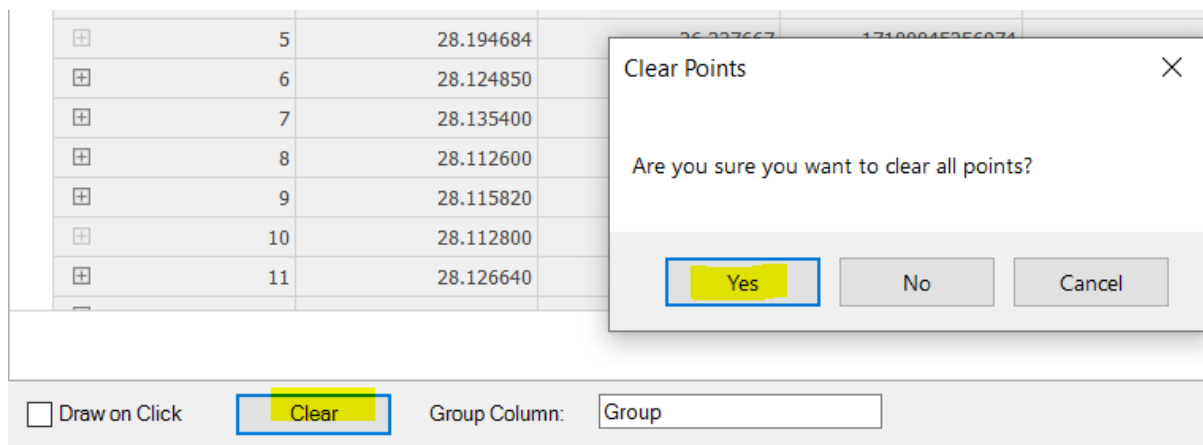
Routed in 93ms means how long the system took to find a solution for what you have inputted. In this example it took 93 milliseconds to solve.

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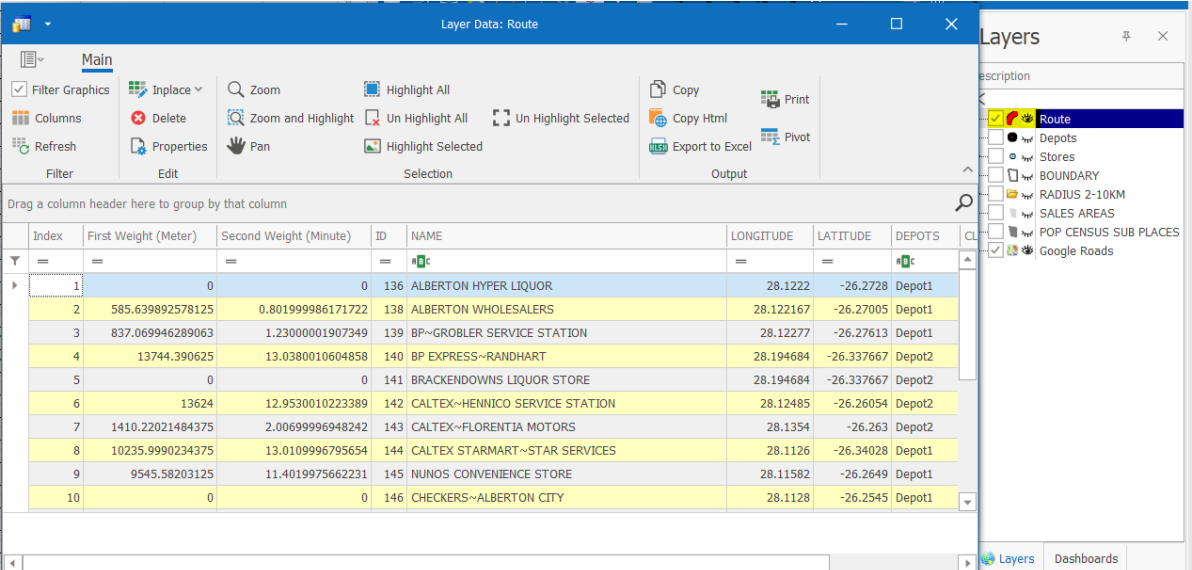


Index	X	Y	Node ID	First Weight (Meter)	Second Weight (Minute)
1	28.122200	-26.272800	17100045205141	0.00	0.0
		-26.270050	17100045274352	585.64	0.8
		-26.276130	17100044957367	837.07	1.2
	28.194684	-26.337667	17100045256974	13744.39	13.0
	28.194684	-26.337667	17100045256974	0.00	0.0
	28.124850	-26.260540	17100045165242	13624.00	13.0
	28.135400	-26.263000	17100045324438	1410.22	2.0
8	28.112600	-26.340280	17100045150202	10236.00	13.0
9	28.115820	-26.264900	17100045208366	9545.58	11.4
10	28.112800	-26.254500	17100046161098	0.00	0.0
11	28.126640	-26.263104	17100045257530	2154.26	2.4

You can copy or save this data for future reference and analysis.



If you need to clear your points and start again, click **Clear** and then **Yes**.



Index	First Weight (Meter)	Second Weight (Minute)	ID	NAME	LONGITUDE	LATITUDE	DEPOTS
1	0	0	136	ALBERTON HYPER LIQUOR	28.1222	-26.2728	Depot1
2	585.639892578125	0.801999986171722	138	ALBERTON WHOLESALERS	28.122167	-26.27005	Depot1
3	837.069946289063	1.23000001907349	139	BP~GROBLER SERVICE STATION	28.12277	-26.27613	Depot1
4	13744.390625	13.0380010604858	140	BP EXPRESS~RANDHART	28.194684	-26.337667	Depot2
5	0	0	141	BRACKENDOWNS LIQUOR STORE	28.194684	-26.337667	Depot2
6	13624	12.9530010223389	142	CALTEX~HENNICO SERVICE STATION	28.12485	-26.26054	Depot2
7	1410.22021484375	2.00699996948242	143	CALTEX~FLORENTIA MOTORS	28.1354	-26.263	Depot2
8	10235.9990234375	13.0109996795654	144	CALTEX STARMART~STAR SERVICES	28.1126	-26.34028	Depot1
9	9545.58203125	11.4019975662231	145	NUNOS CONVENIENCE STORE	28.11582	-26.2649	Depot1
10	0	0	146	CHECKERS~ALBERTON CITY	28.1128	-26.2545	Depot1

You can also view your data in the **Layer Data** grid.

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