

Q-Traf

A Macroscopic Road Traffic Model

Version 779o

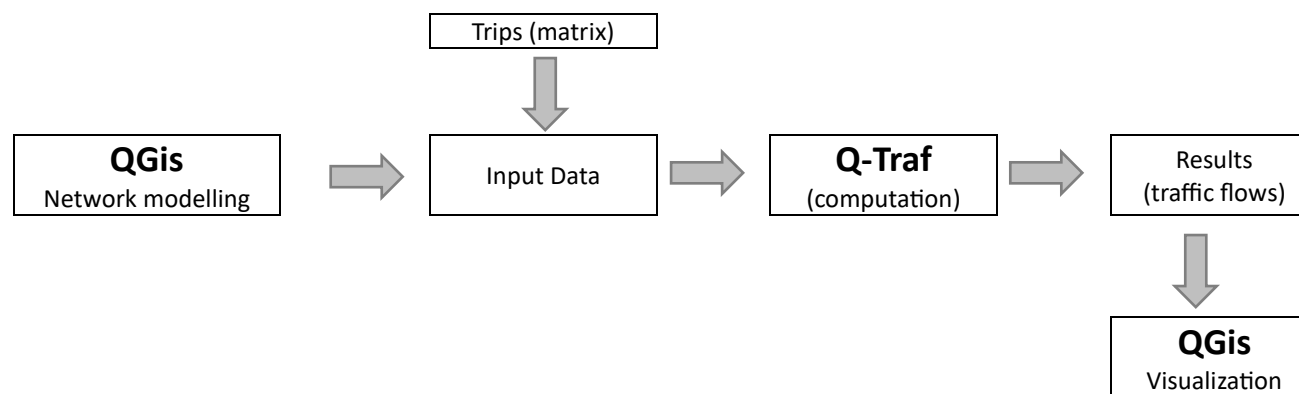
Users Manual

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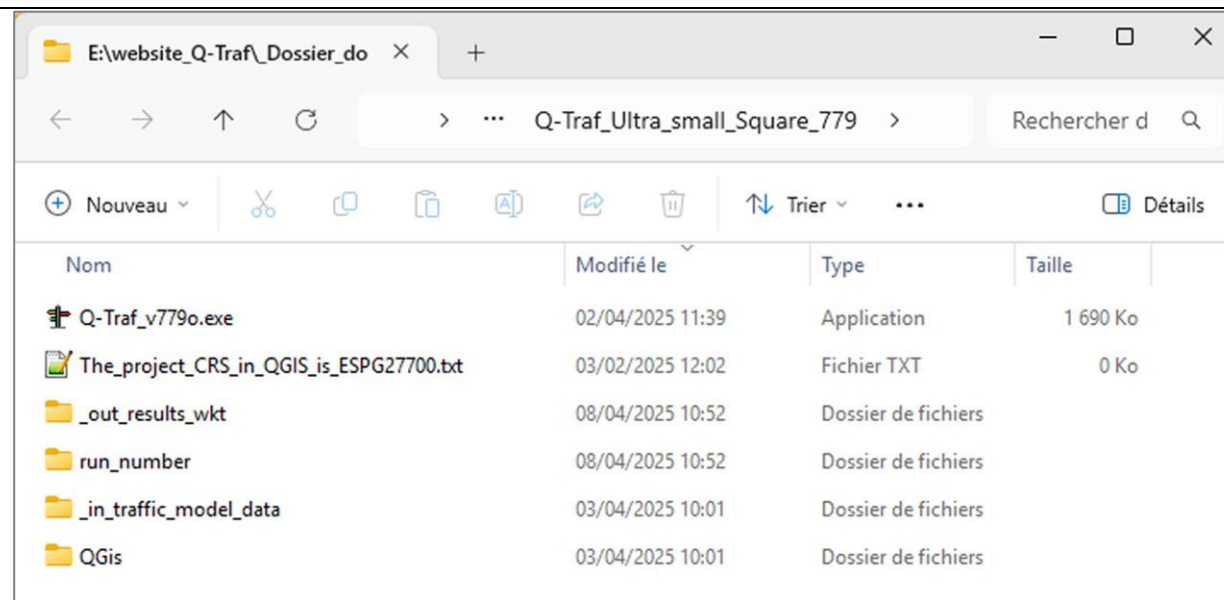
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1. WHAT IS Q-TRAF ?

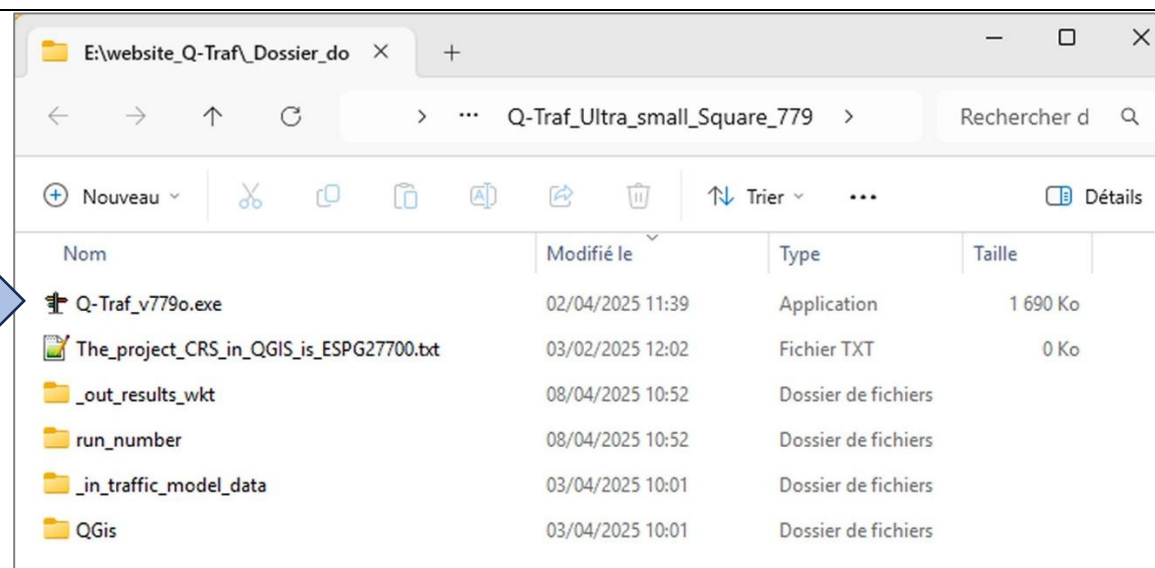


2. GET STARTED - CALCULATE AN ASSIGNMENT WITH ONE OF THE EXAMPLE PROVIDED

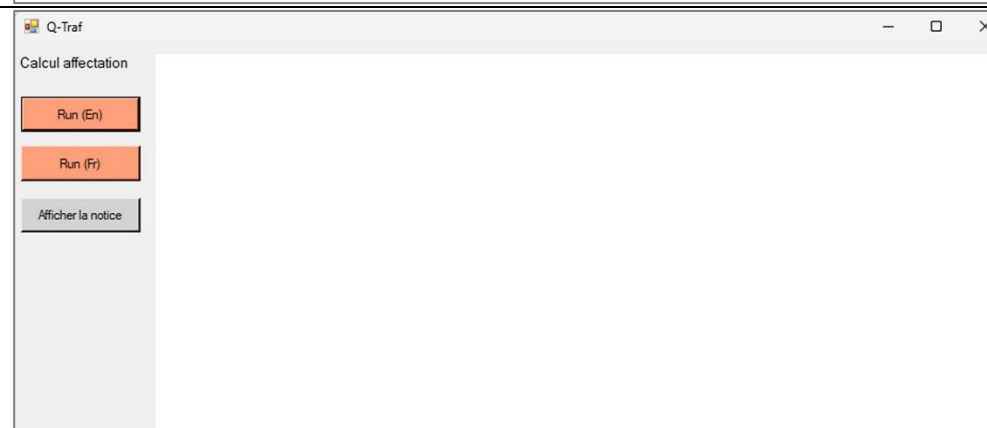
Open the folder of your project, or one of the folder-example provided (here Ultra_small_square) :)



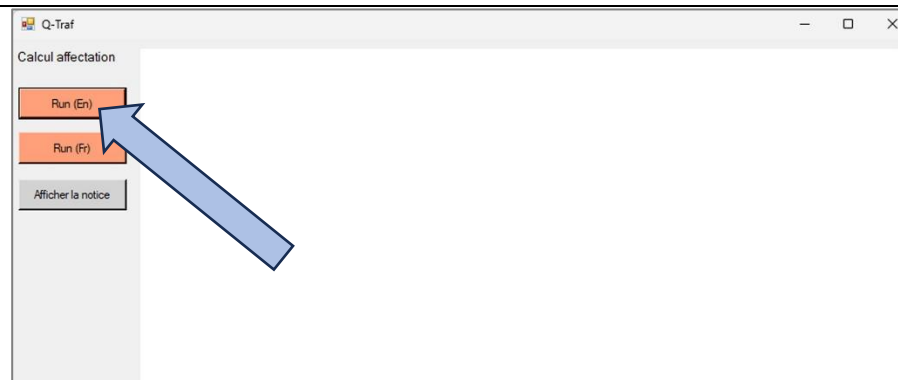
Launch Q-Traf (double click on Q-Traf_vxxx.exe) :



The window of the program Q-Traf pops-up :

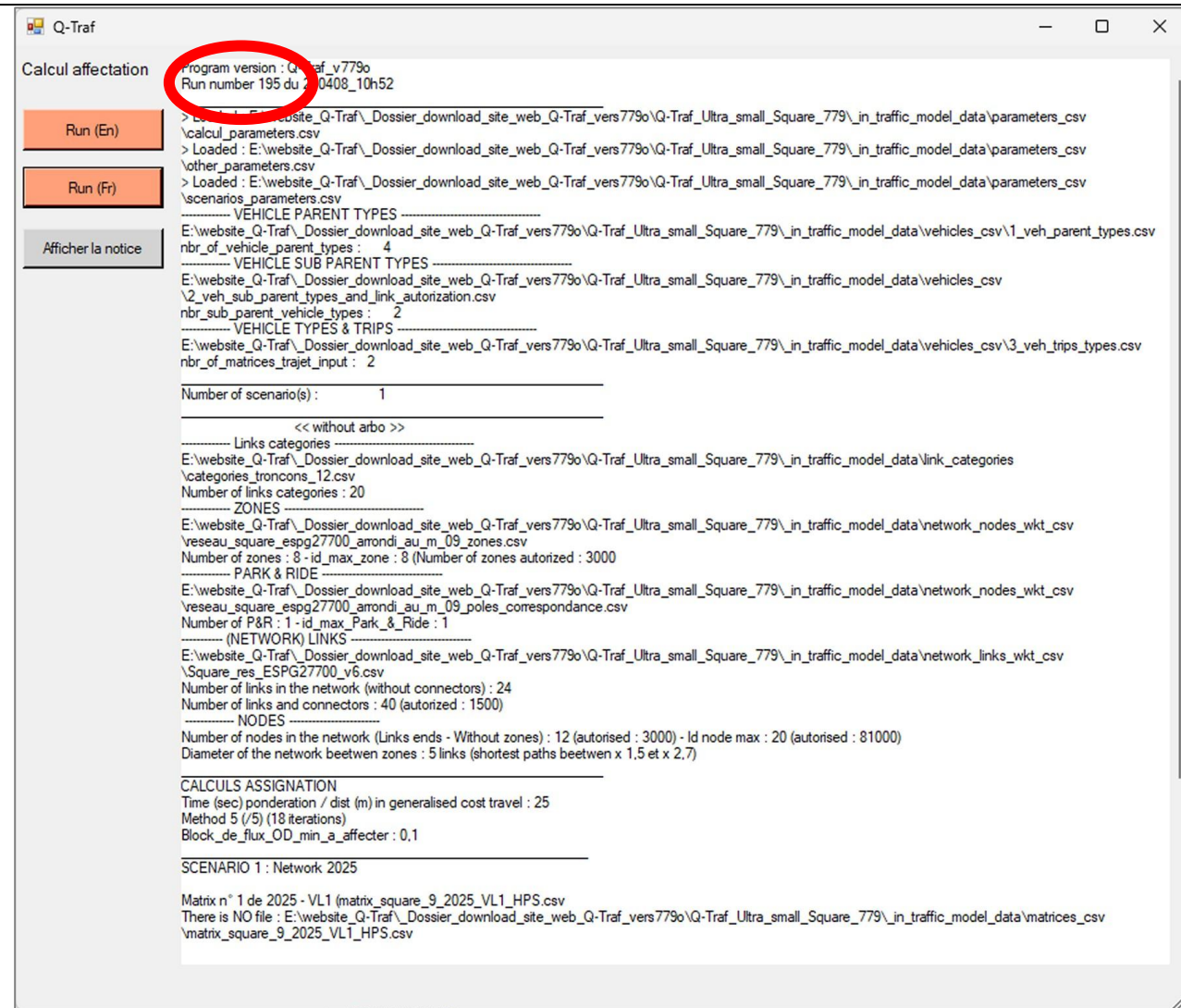


Click « Run (En) » :

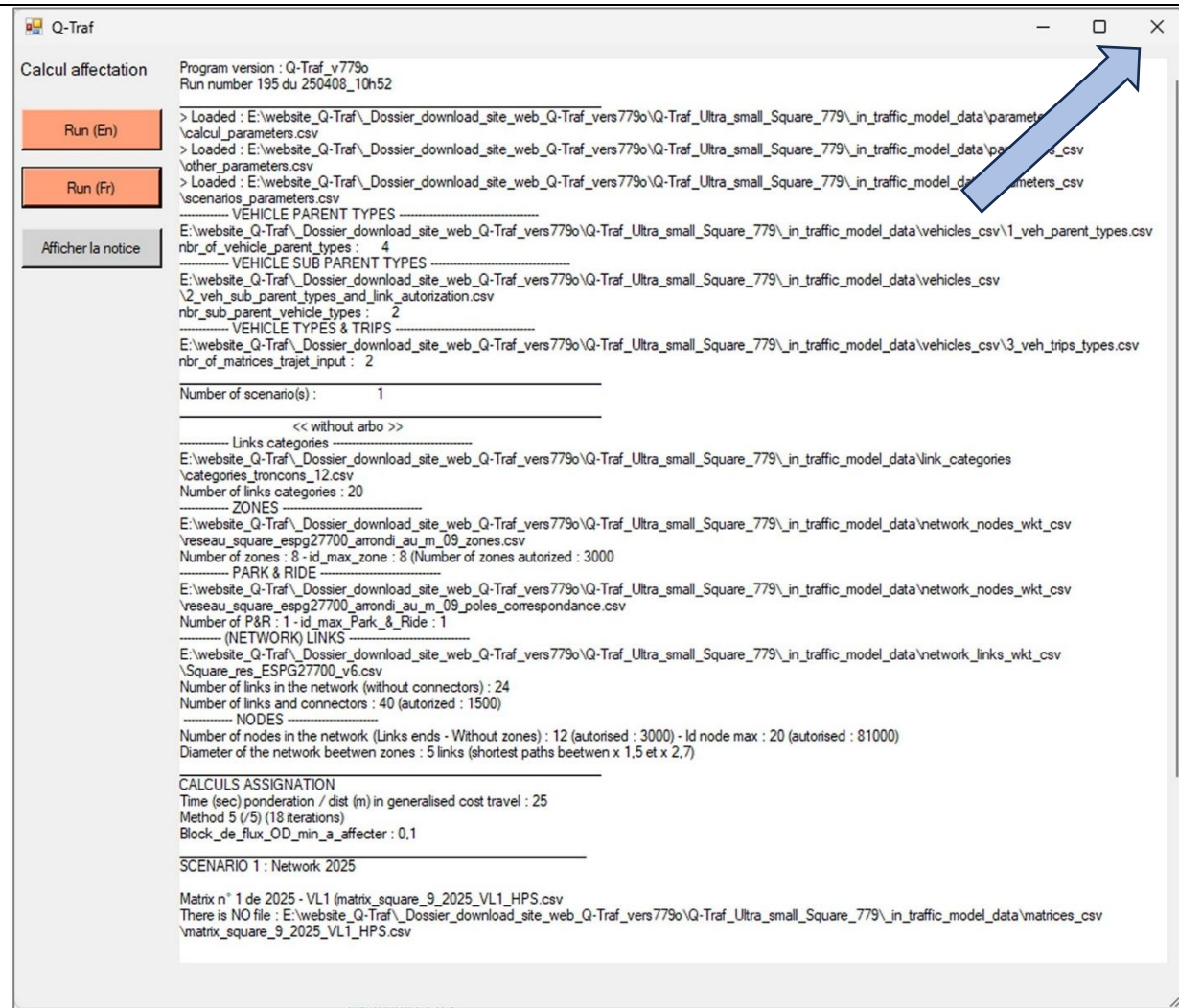


Wait (a few seconds) until the calculations are finished :

Note that the run number is **195**



Close the window :



3. RESULT FILES

Files type

The files « result » are :

- *.txt for the log file
- *.csv for all the other files

All the *.csv files can be :

- directly imported in QGis (see « How to open the csv files in QGis ») without modification. They are in the format WKT (Well Known Text)
- opened with a spreadsheet Software (Excel, LibreOffice, OpenOffice)

What is the format WKT (Well Known Text) for QGis

Next is the content of the file « all_veh_Scen1_Net_2025_PPH_run196.csv ».
This file provides the flow for each link and each type of vehicles.

The lines

The first line contains the column headers / name of the fields.

Then there is one line for each link.

The first column contains the coordinates of the link, which can be read by QGis

The columns

Each column contains one type of data.

all_veh_Scen1_Net_2025_mat_2025_PPH_run196.csv - OpenOffice Calc

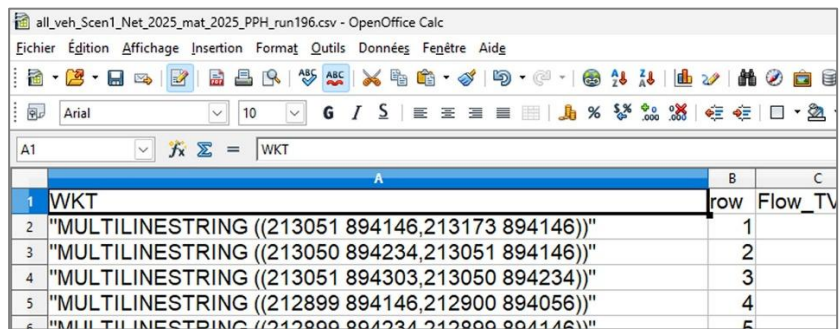
Fichier Édition Affichage Insertion Format Outils Données Fenêtre Aide

Rec

A1

WKT

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	WKT	row	Flow_TV_all	Flow_uvp_po	Class_car	Class_truck	Class_bus	Class_ped	Mat_VL1	Mat_PL1	Charge_uvp_poe	pc_truck	
2	MULTILINESTRING ((213051 894146,213173 894146))	1	24	24	24				24			2	
3	MULTILINESTRING ((213050 894234,213051 894146))	2	38	38	38				38			3	
4	MULTILINESTRING ((213051 894303,213050 894234))	3	12	12	12				12			1	
5	MULTILINESTRING ((212899 894146,212900 894056))	4	329	329	329				329			27	
6	MULTILINESTRING ((212899 894234,212899 894146))	5	118	118	118				118			10	
7	MULTILINESTRING ((212898 894297,212899 894234))	6	29	29	29				29			2	
8	MULTILINESTRING ((212899 894146,212779 894146))	7	195	195	195				195			16	
9	MULTILINESTRING ((213051 894146,212899 894146))	8	83	83	83				83			7	
10	MULTILINESTRING ((212899 894234,212778 894233))	9	48	48	48				48			4	
11	MULTILINESTRING ((213050 894234,212899 894234))	10	10	10	10				10			1	
12	MULTILINESTRING ((213050 894234,213178 894235))	11	23	23	23				23			2	
13	MULTILINESTRING ((213173 894146,213051 894146))	12	54	54	54				54			4	
14	MULTILINESTRING ((213051 894146,213050 894234))	13	17	17	17				17			1	
15	MULTILINESTRING ((213050 894234,213051 894303))	14	5	5	5				5			0	
16	MULTILINESTRING ((212900 894056,212899 894146))	15	71	71	71				71			6	
17	MULTILINESTRING ((212899 894146,212899 894234))	16	48	48	48				48			4	
18	MULTILINESTRING ((212899 894234,212898 894297))	17	11	11	11				11			1	
19	MULTILINESTRING ((212779 894146,212899 894146))	18	339	339	339				339			28	
20	MULTILINESTRING ((212899 894146,213051 894146))	19	41	41	41				41			3	
21	MULTILINESTRING ((212778 894233,212899 894234))	20	99	99	99				99			8	
22	MULTILINESTRING ((212899 894234,213050 894234))	21	7	7	7				7			1	
23	MULTILINESTRING ((213178 894235,213050 894234))	22	40	40	40				40			3	
24	MULTILINESTRING ((213051 894060,213051 894146))	23	10	10	10				10			1	
25	MULTILINESTRING ((213051 894146,213051 894060))	24	19	19	19				19			2	
26	MULTILINESTRING ((212898 894334,212898 894297))	25	29	29	29				29				
27	MULTILINESTRING ((212898 894297,212898 894334))	26	11	11	11				11				
28	MULTILINESTRING ((212749 894144,212779 894146))	27	339	339	339				339				
29	MULTILINESTRING ((212779 894146,212749 894144))	28	195	195	195				195				
30	MULTILINESTRING ((213213 894151,213173 894146))	29	54	54	54				54				
31	MULTILINESTRING ((213173 894146,213213 894151))	30	24	24	24				24				
32	MULTILINESTRING ((212749 894231,212778 894233))	31	99	99	99				99				
33	MULTILINESTRING ((212778 894233,212749 894231))	32	48	48	48				48				
34	MULTILINESTRING ((213048 894021,213051 894060))	33	10	10	10				10				
35	MULTILINESTRING ((213051 894060,213048 894021))	34	19	19	19				19				
36	MULTILINESTRING ((212900 894023,212900 894056))	35	71	71	71				71				
37	MULTILINESTRING ((212900 894056,212900 894023))	36	329	329	329				329				
38	MULTILINESTRING ((213215 894235,213178 894235))	37	40	40	40				40				
39	MULTILINESTRING ((213178 894235,213215 894235))	38	23	23	23				23				
40	MULTILINESTRING ((213049 894338,213051 894303))	39	12	12	12				12				
41	MULTILINESTRING ((213051 894303,213049 894338))	40	5	5	5				5				
42													
43													
44													
45													



The screenshot shows the OpenOffice Calc interface with a file named 'all_veh_Scen1_Net_2025_mat_2025_PPH_run196.csv'. The spreadsheet has three columns: A, B, and C. Column A contains WKT (Well-Known Text) coordinates, and column B contains row numbers. The data is as follows:

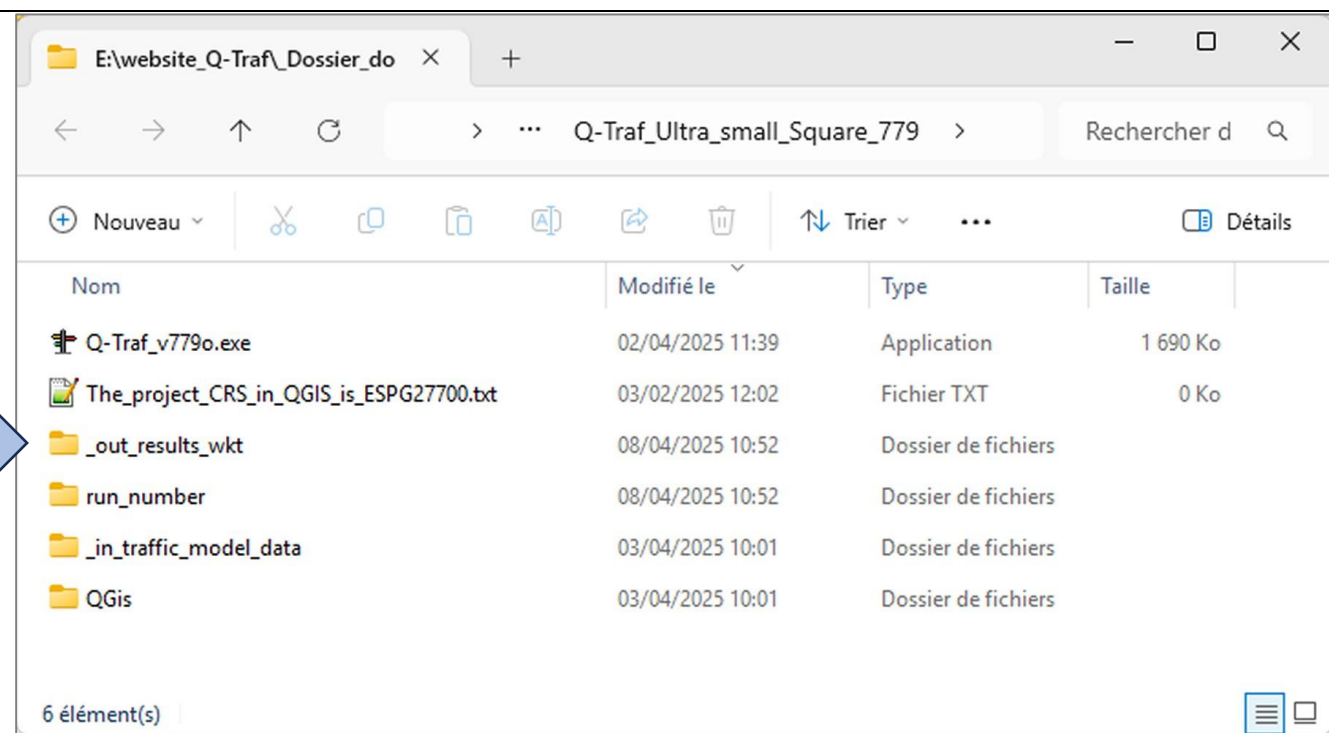
	A	B	C
1	WKT	row	Flow_TV
2	"MULTILINESTRING ((213051 894146,213173 894146))"	1	
3	"MULTILINESTRING ((213050 894234,213051 894146))"	2	
4	"MULTILINESTRING ((213051 894303,213050 894234))"	3	
5	"MULTILINESTRING ((212899 894146,212900 894056))"	4	
6	"MULTILINESTRING ((212899 894234,212899 894146))"	5	

The coordinates of the links, which can be directly imported in QGis

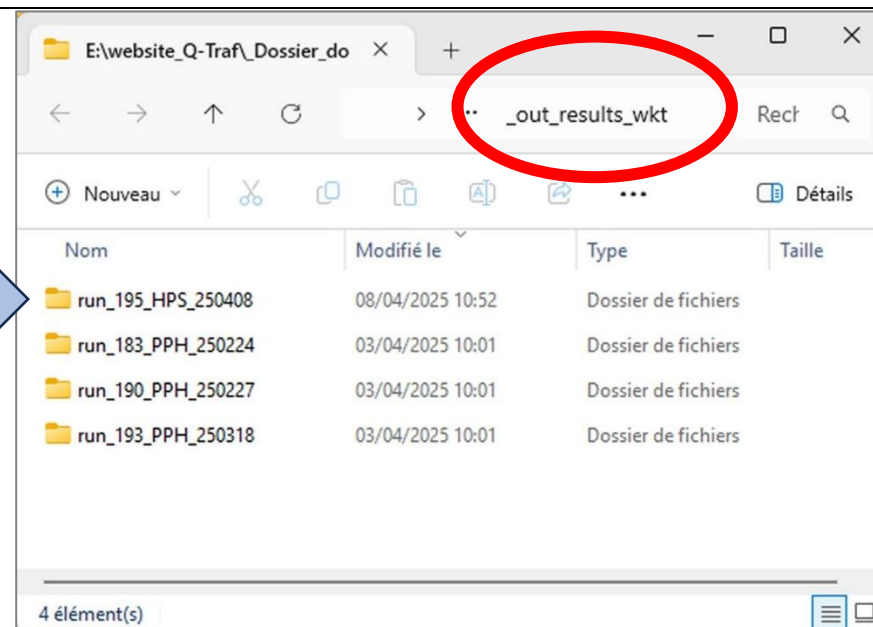
Location of the files

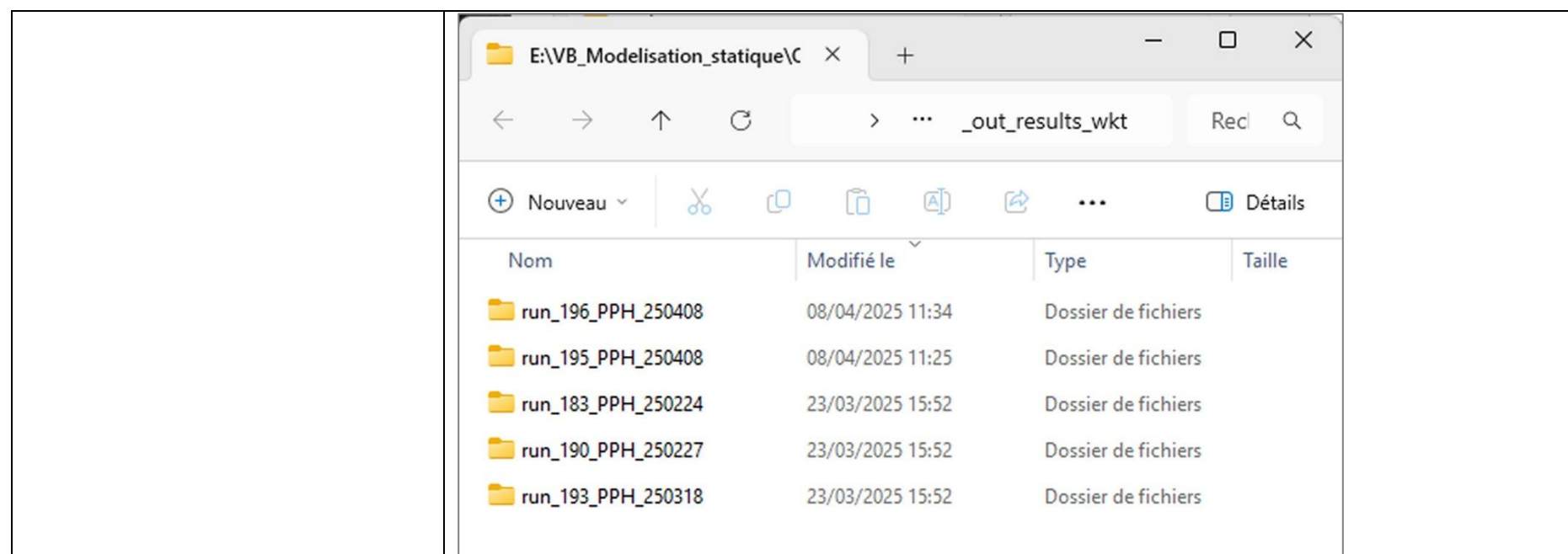
The results of the calculations are in the folder « _out_results_wkt » :

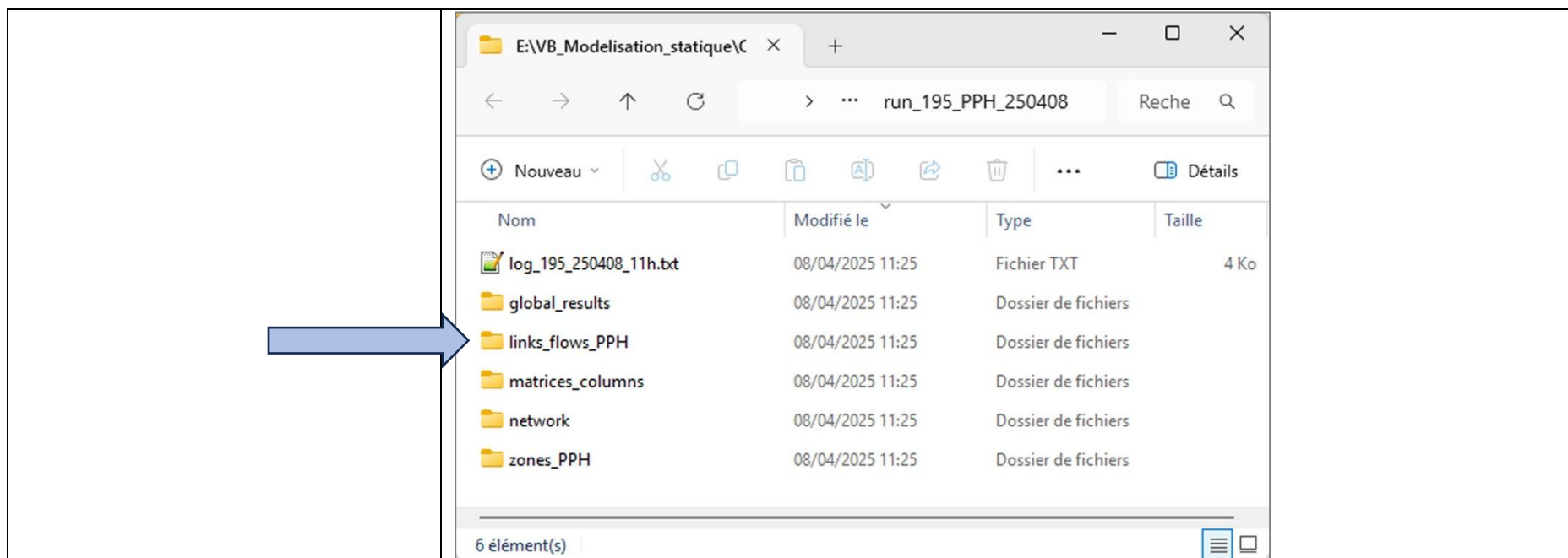
Open the folder « _out_results_wkt »

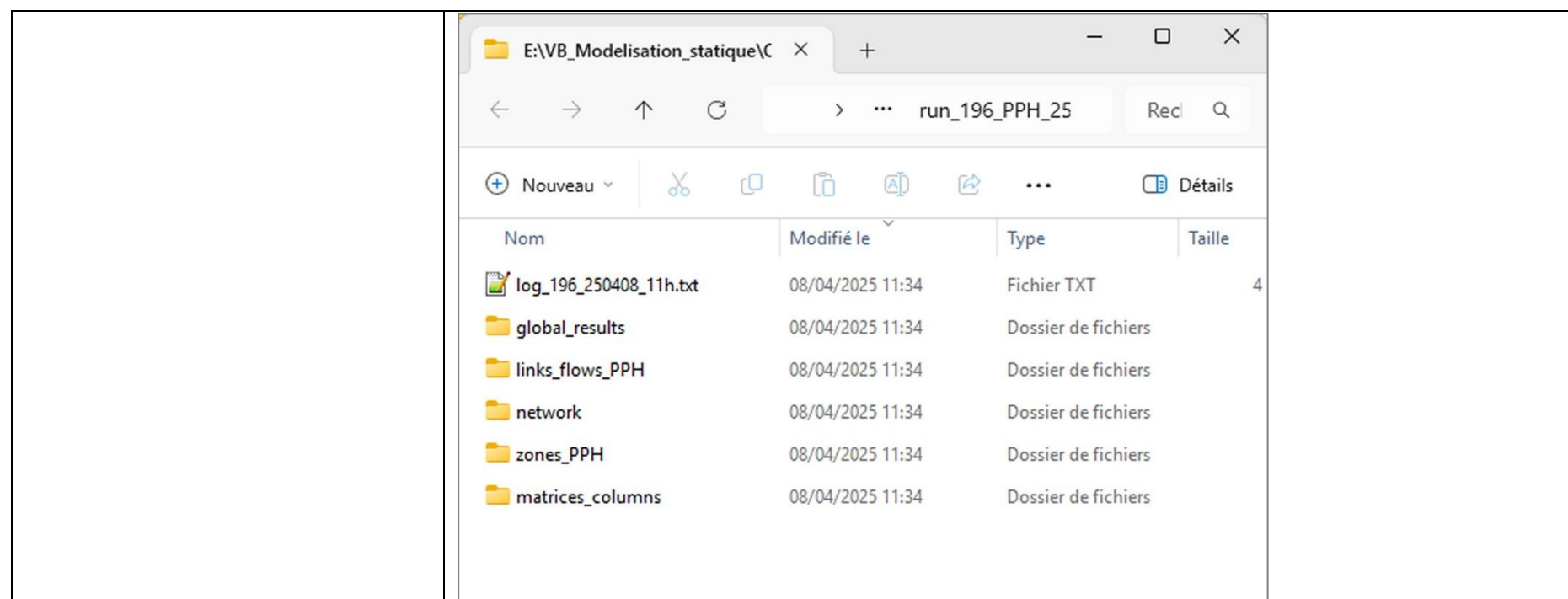


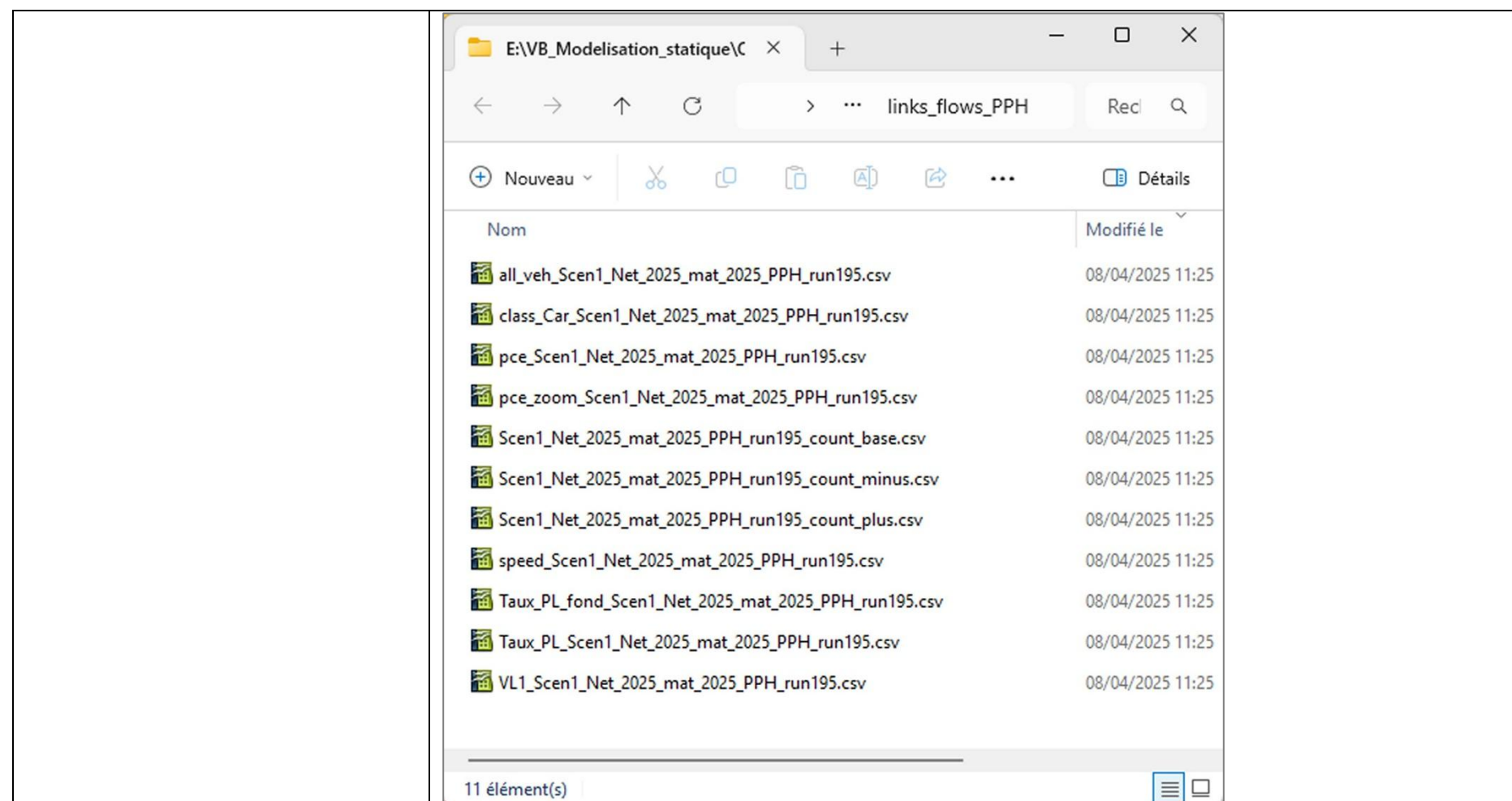
Open the folder of the last run
« run_195_HPS_250408 » :

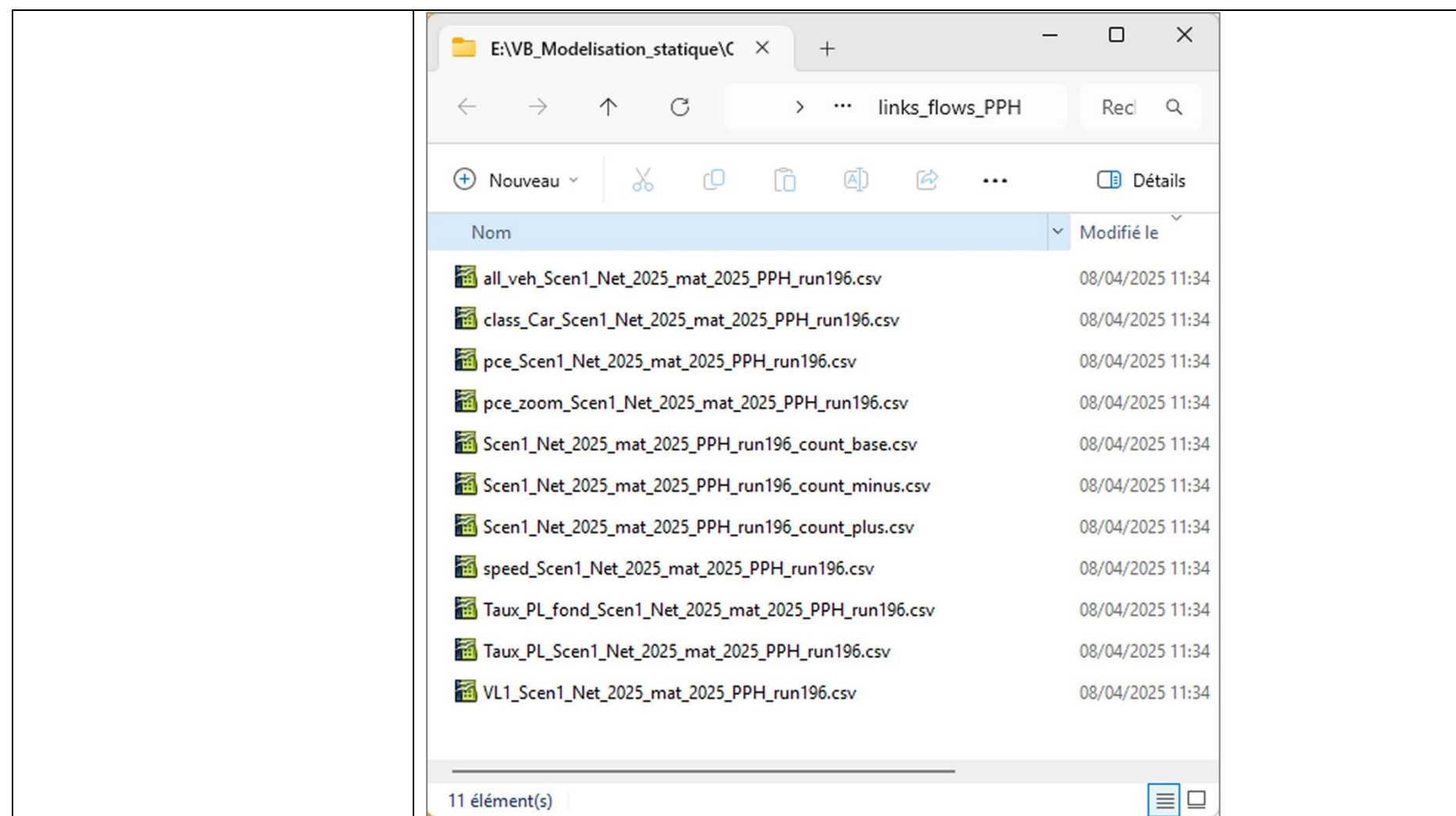












4. HOW TO OPEN THE CSV FILES WITH A SPREADSHEET SOFTWARE

Import de texte - [all_veh_Scen1_Net_2025_mat_2025_PPH_run196.csv]

Importer

Jeu de caractères: **Unicode (UTF-8)**

Langue: **Par défaut - Français (France)**

À partir de la ligne: **1**

Options de séparateur

☐ Largeur fixe

☒ Séparé par

☐ Tabulation ☐ Virgule ☐ Autres

☒ Point-virgule ☐ Espace

☐ Fusionner les séparateurs

Séparateur de texte: **[v]**

Autres options

☐ Champ entre guillemets comme texte

☐ Détecter les nombres spéciaux

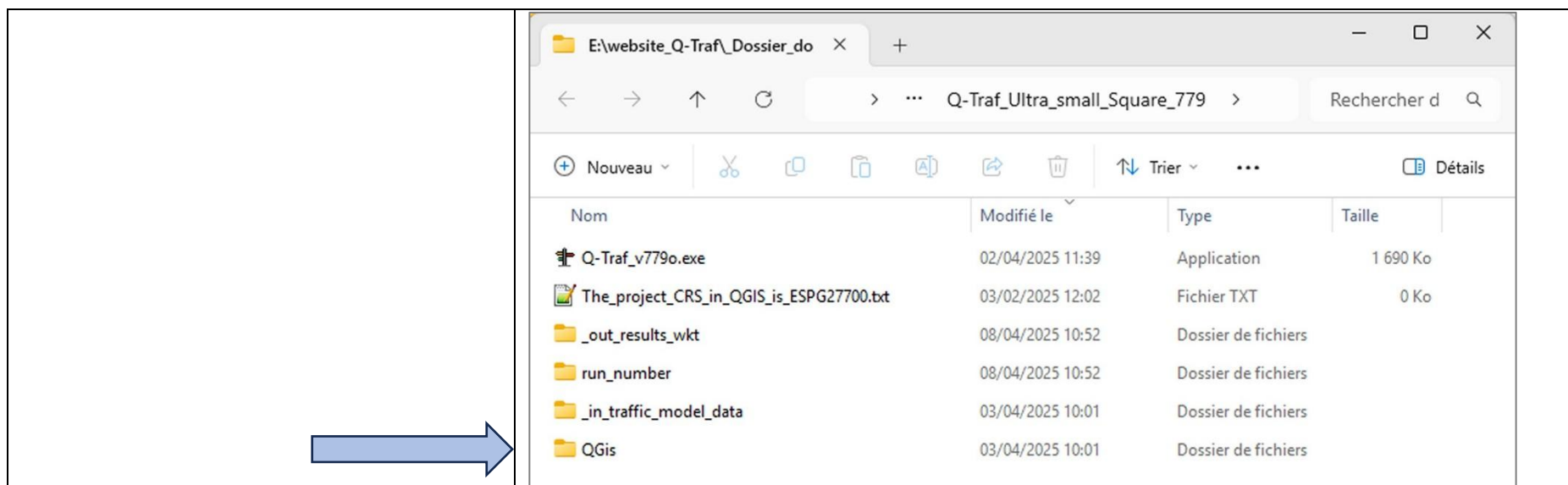
Champs

Type de colonne: **[v]**

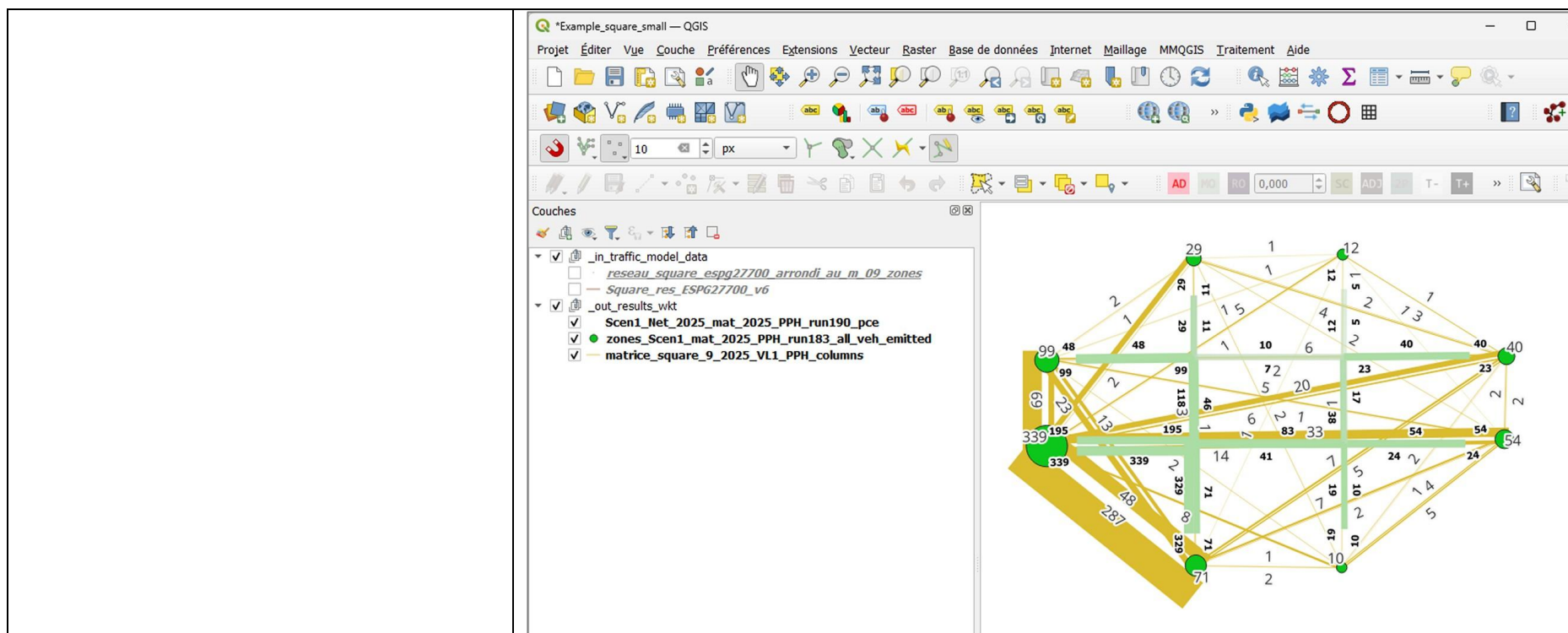
	Standard	Standard	Standard
1	WKT	row	Flow_TV_#
2	MULTILINESTRING ((213051 894146,213173 894146))	1	24
3	MULTILINESTRING ((213050 894234,213051 894146))	2	38
4	MULTILINESTRING ((213051 894303,213050 894234))	3	12
5	MULTILINESTRING ((212899 894146,212900 894056))	4	329
6	MULTILINESTRING ((212899 894234,212899 894146))	5	118
7	MULTILINESTRING ((212898 894297,212899 894234))	6	29

5. HOW TO OPEN THE CSV FILES IN QGIS

How to visualize the results of an assignment





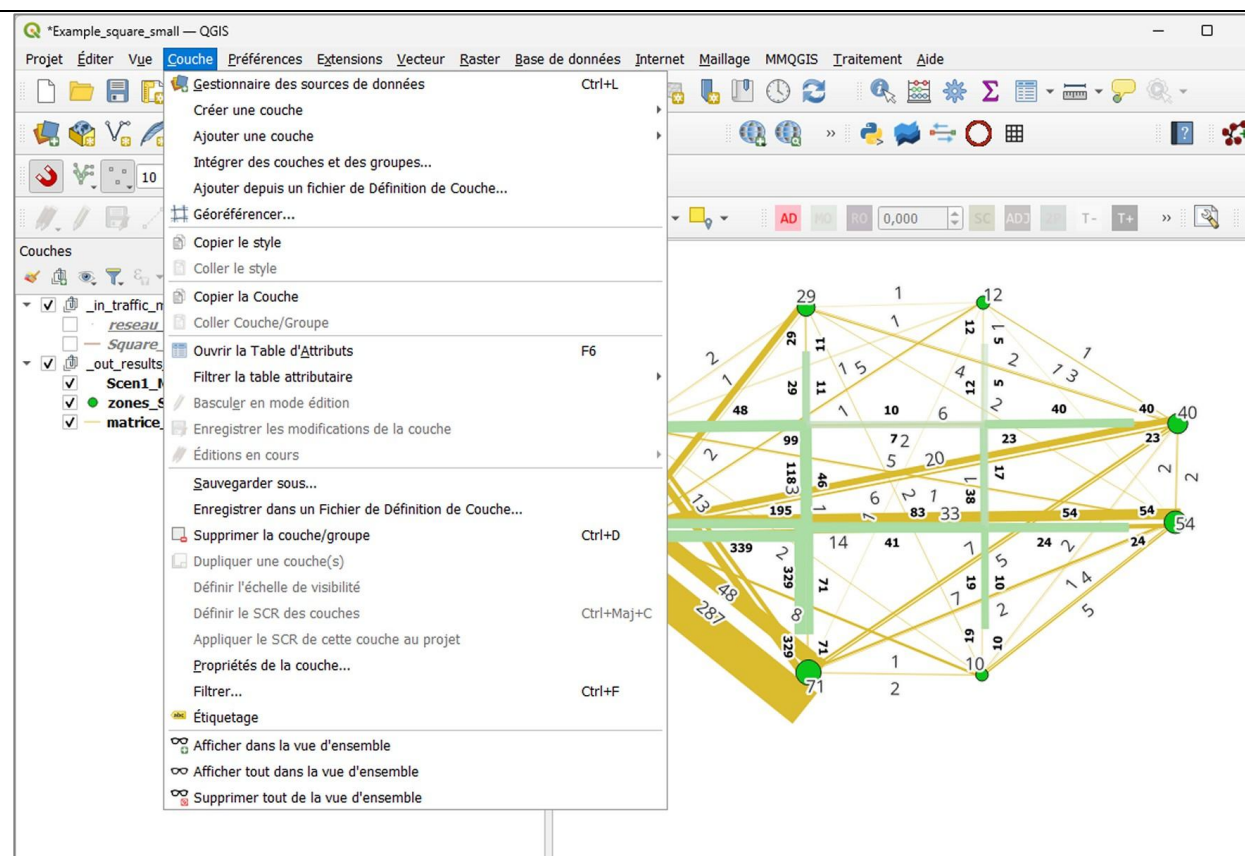


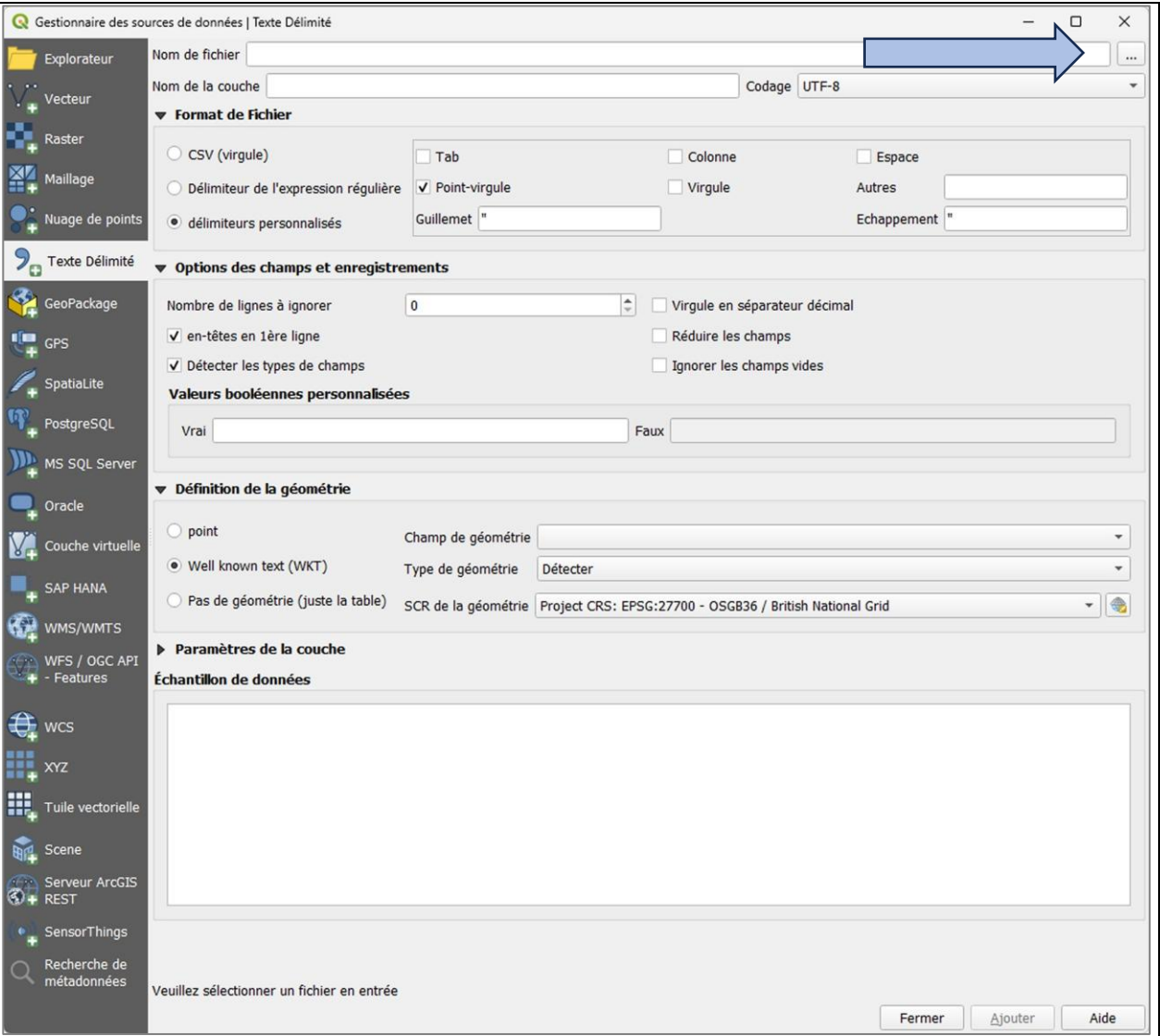
Import your result.

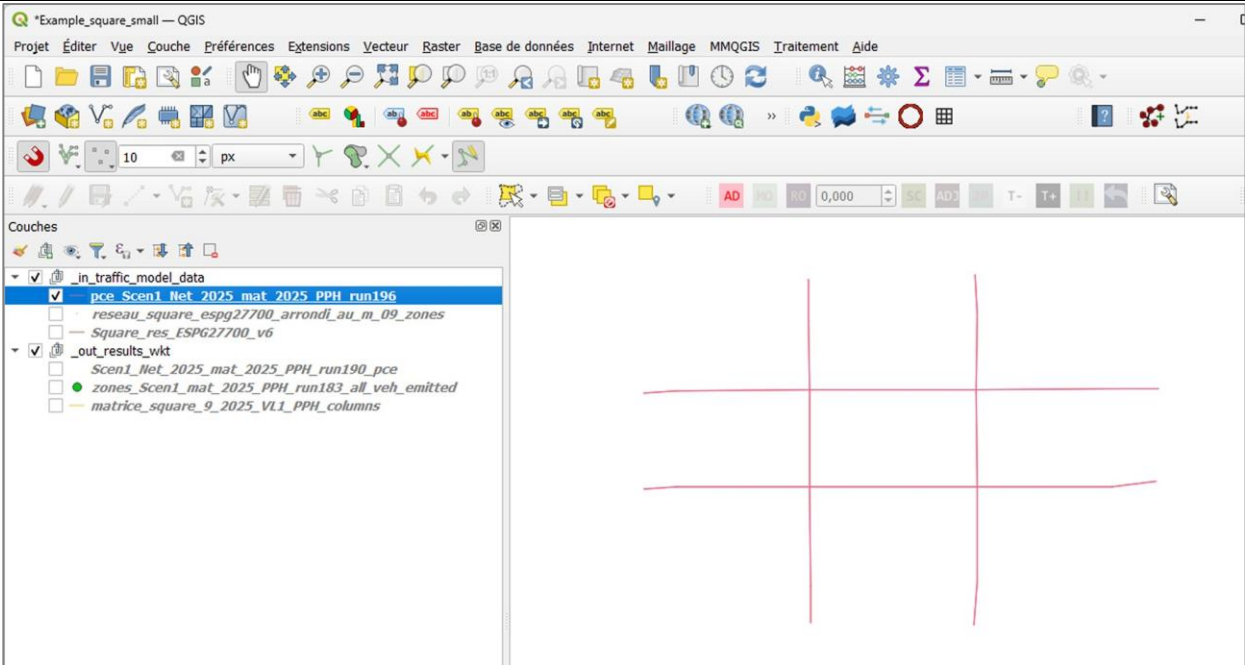
Here we will choose the hourly traffic flow in pce (personal car equivalent)

Choose :

- Layer
- Add a layer
(This opens the window on the right)
- Add a text delimited layer (which is a *.csv file)



Choose the file : « pce_Scen1_Net_2025_mat_2025_PPH_run196.csv » Beware of the 3 options : - « Point-virgule » is essential - Well known text (WKT) - SCR : Choose the second in deroulant menu, which is the SCR of the project Add the botoom, click « Add » then « Close »	

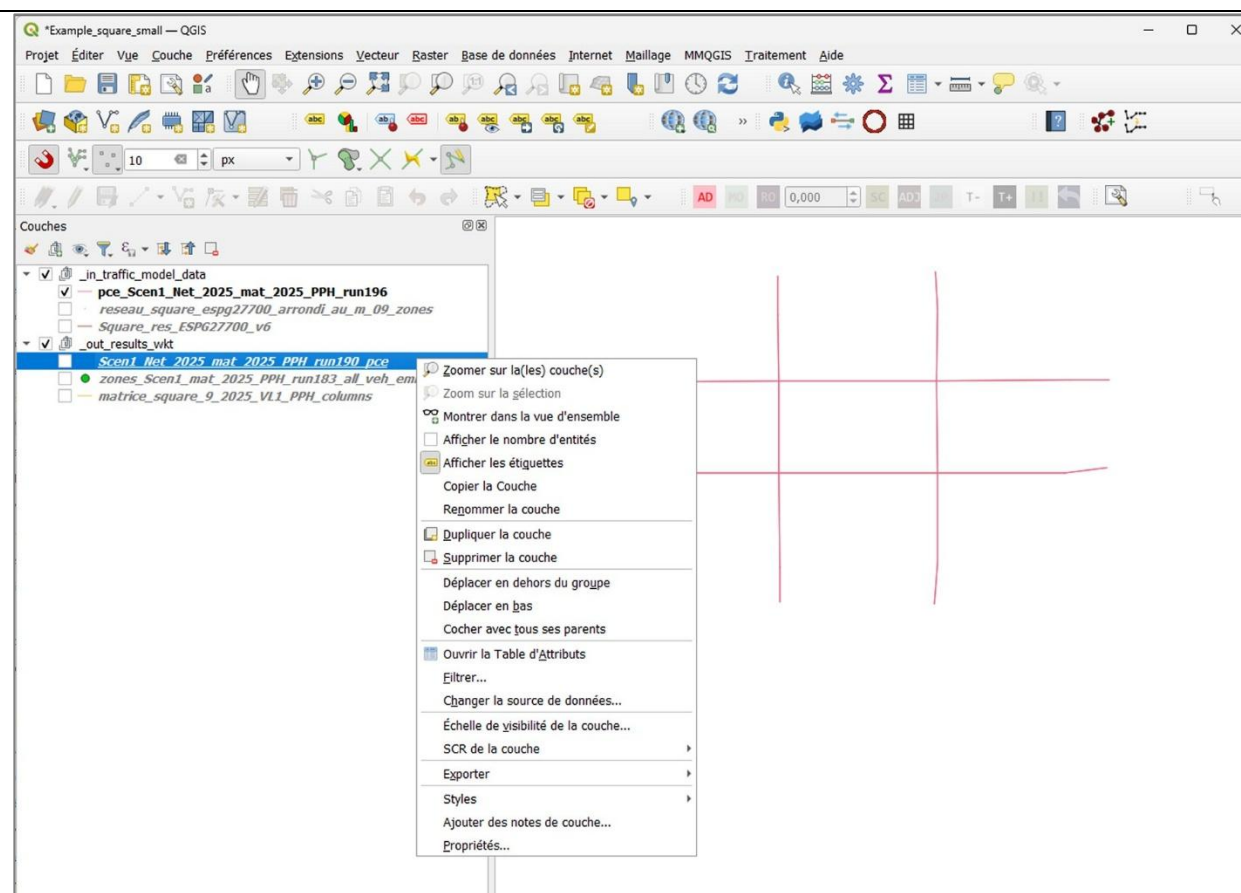
The new file is then imported in your QGis project. Note that only the lines are drawn. The layer contains all the data, but they are not drawn, as there is no graphical parameters defined.	

We will take the graphical **data** of a layer of the same type

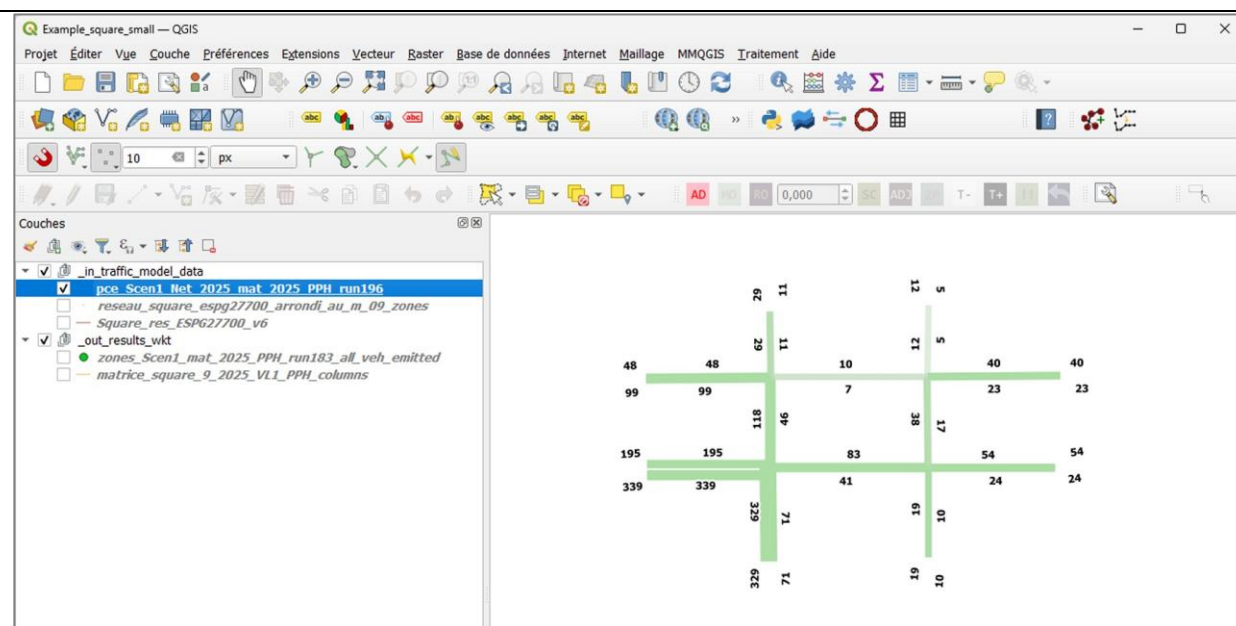
Choose / select / click on **xxxx**

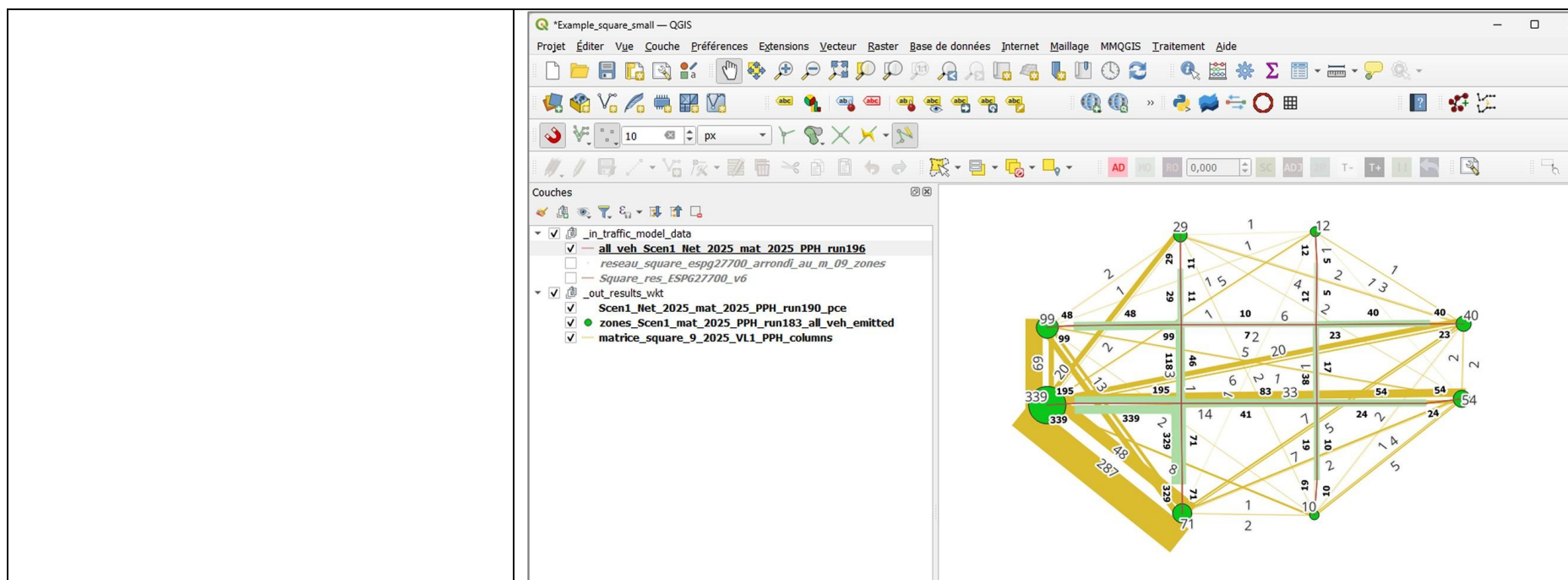
Right click

Then choose « styles > Copy »



Select / Click on your newly imported layer, then right click and choose « styles > Paste »

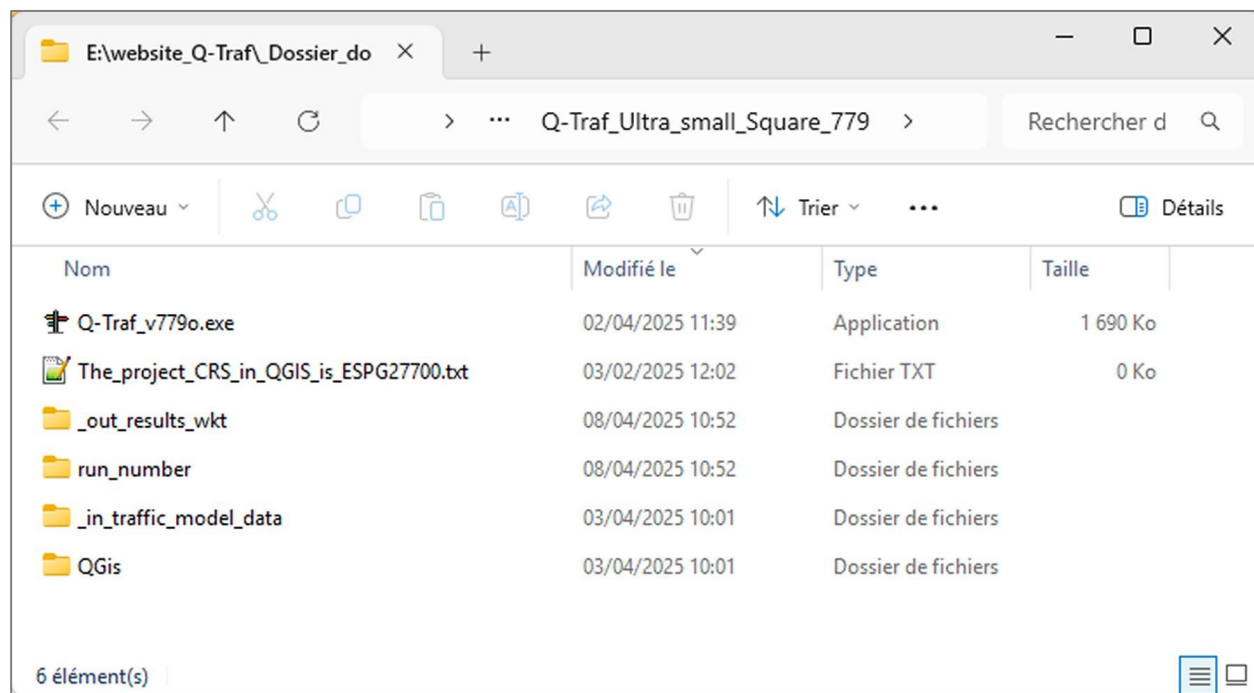




6. HOW TO MANIPULATE THE DATA FILES — EXCEL, THE « .CSV » FORMAT, ...

7. HOW TO MODIFY YOUR INPUT DATA

8. FOLDERS TREE STRUCTURE

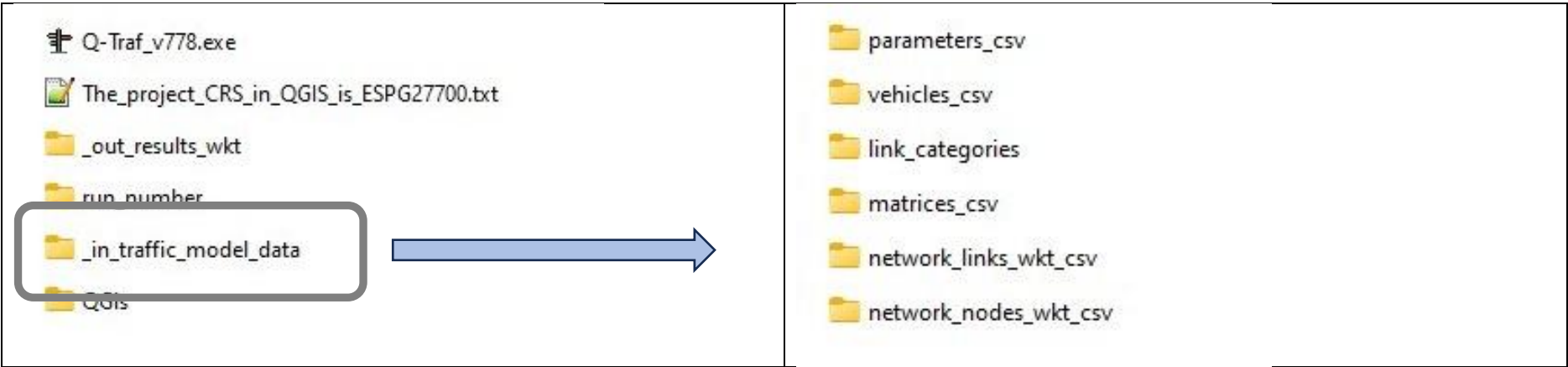


folder	contains		
« _in_traffic_model_data »	All the data of the model	This folder name must not be modified	
« _out_results_wkt »	All the results	This folder name must not be modified	
« Run_number »			

When all the data are **renseigné**, double-click on the program « Q-Traf_v....exe ». After a few seconds a sub-folder result « xxxx » is created in the folder « _out_results_wkt ». The files in this sub-folder result are :

- WKT csv files, which can be import in a GIS
- Txt files

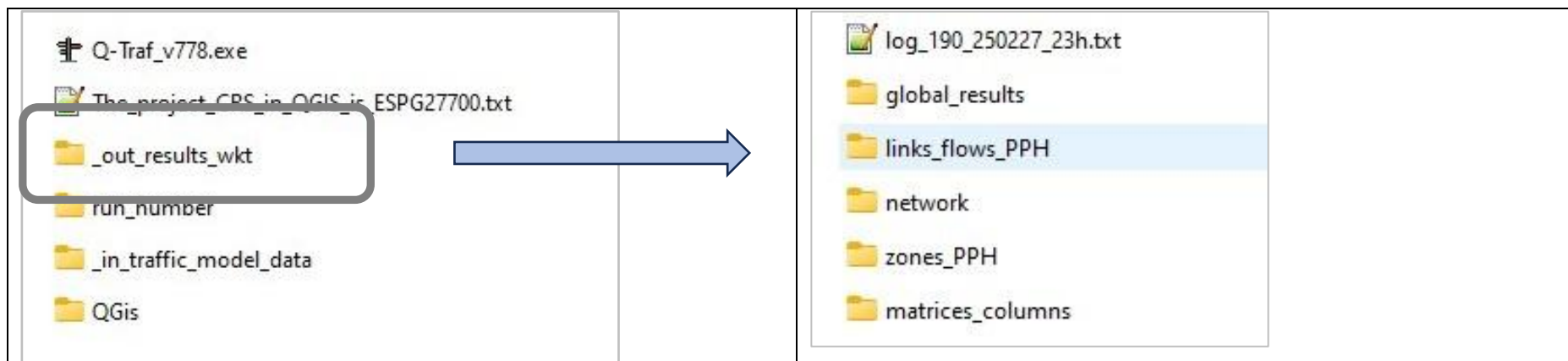
Data folder tree structure



Folder	
vehicles_csv	vehicle_trips_types.csv vehicle_trips_types.xlsx vehicle_sub_parent_types_and_link_authorized.csv vehicle_sub_parent_types_and_link_authorized.xlsx vehicle_parent_types.csv vehicle_parent_types.xlsx

 parameters_csv	 scenarios_parameters.csv  scenarios_parameters.xlsx  calcul_parameters.csv  calcul_parameters.xlsx  other_parameters.csv  other_parameters.xlsx
 link_categories	
 network_links_wkt_csv	
 network_nodes_wkt_csv	 reseau_square_espg27700_arrondi_au_m_09_zones.csv  reseau_square_espg27700_arrondi_au_m_09_poles_correspondance.csv
 matrices_csv	 matrix_square_9_2025_VL1_PPH.csv  matrix_square_9_2030_VL1_PPH.csv

Results folder tree structure



9. DATA FOLDERS CONTENT

Folder « vehicles_csv »

File : 1_veh_parent_types

Number	Vehicle_type name EN	Fr
1	Car	VL
2	Truck	PL
3	Bus	TC
4	Ped	MaP

File : 2_veh_sub_parent_types_and_link_authorized

	Parent_type - Mode autorise	Id - Autorisation type	Name	VEH	PCE
Autorisations VL	1	1	VL1	1	1
	1				
	1				
Autorisations PL	2	2	PL1	1	2
Autorisations TC	3		TC1		
Autorisations MaP	4		MaP1		

	Parent_type - Mode autorise	Id - Autorisation type	Name	VEH	PCE
--	-----------------------------	------------------------	------	-----	-----

Autorisations VL	1	1	VL1	1	1
	1				
	1				
Autorisations PL	2	2	PL1	1	2
Autorisations TC	3		TC1		
Autorisations MaP	4		MaP1		

File : 3_veh_trips_types

Id	matrix_name_suffix	matrix_%	Vehicle_sub_parent_type & Link_Autorization	Bimodal - 2d sub_parent_type & Link_Autorization		Pax	Matrice a caler
1	VL1	100	1			1,2	1
2	PL		2				
3							
4							
5							
6							
7							
8							

Id	matrix_name_suffix	matrix_%	Vehicle_sub_parent_type & Link_Autorization	Bimodal - 2d sub_parent_type & Link_Autorization		Pax	Matrice a caler
1	VL1	100	1			1,2	1
2	PL		2				
3							
4							
5							
6							
7							
8							

Folder « network_links_wkt_csv »

File : The name of the file is specified in the file scenarios_parameters

WKT	Row_qgis	Nœud_A	Nœud_B	Longueur	category	PEN_VLx100	PEN_PLx100	PEN_Tcx100	avec_arbo	TV_HPM	perso1	TV_HPS	perso2	TV_JO	perso3	Netwo_1	Netwo_2
-----	----------	--------	--------	----------	----------	------------	------------	------------	-----------	--------	--------	--------	--------	-------	--------	---------	---------

MULTILINESTRING ((213050.715492003 894146.019545413,213173.198461582 894146.141505696))	1			122	31											1	
MULTILINESTRING ((213050.172431788 894234.052181831,213050.715492003 894146.019545413))	2			88	31											1	
MULTILINESTRING ((213050.506417233 894302.912737598,213050.172431788 894234.052181831))	3			69	31											1	
MULTILINESTRING ((212899.340458143 894145.945498098,212899.554433103 894055.507592787))	4			90	31											1	
MULTILINESTRING ((212898.509059252 894234.092292386,212899.340458143 894145.945498098))	5			88	31											1	
MULTILINESTRING ((212898.439367662 894296.91926085,212898.509059252 894234.092292386))	6			63	31											1	
MULTILINESTRING ((212899.340458143 894145.945498098,212779.475823382 894145.862739335))	7			120	31											1	
MULTILINESTRING ((213050.715492003 894146.019545413,212899.340458143 894145.945498098))	8			151	31											1	
MULTILINESTRING ((212898.509059252 894234.092292386,212778.430449531 894232.80299797))	9			120	31											1	
MULTILINESTRING ((213050.172431788 894234.052181831,212898.509059252 894234.092292386))	10			152	31											1	
MULTILINESTRING ((213050.172431788 894234.052181831,213177.554185962 894235.346741008))	11			127	31											1	
...	...			...	...											...	

Folder « network_nodes_wkt_csv »

« zones » File : The name of the file is specified in the file scenarios_parameters

WKT	Num	Name	X	Y	field_5_1	field_6_1	type	field_9	Netwo_1	Netwo_2	Netwo_3
POINT (212898.195447096 894334.517873702)	1				zone	prio	1		1	1	1
POINT (212749.334210669 894144.399215944)	2				zone	prio	1		1	1	1
POINT (213213.758967013 894151.647141312)	3				zone	prio	1		1	1	1
POINT (212749.334210669 894231.931853094)	4				zone	prio	1		1	1	1
POINT (213048.729281685 894021.184484669)	5				zone	prio	1		1	1	1
POINT (212900.9831107 894023.414615552)	6				zone	prio	1		1	1	1
POINT (213215.989097896 894235.277049418)	7				zone	prio	1		1	1	1
...	...				...	...	...		...	...	

« P&R » File : The name of the file is specified in the file scenarios_parameters

WKT	id	name
POINT (445000 216000)	1	

Folder « matrices_csv »

File : The name of the file is specified in the files : scenarios_parameters and vehicle_trips_types

			1	2	3	4	5	6	7	8		

1	1		0	20	0	2	0	3	4	0		
2	2		2	0	14	21	8	287	6	1		
3	3		2	33	0	5	4	7	2	1		
4	4		1	69	1	0	2	23	2	1		
5	5		2	0	5	0	0	1	1	1		
6	6		1	48	2	13	2	0	5	0		
7	7		2	20	2	6	2	7	0	1		
8	8		1	5	0	1	1	1	3	0		

Line 2 :Id zones Destination

Column 2 : Id zones Origine

Folder « parameters_csv »

File : calcul_parameters.csv

Parametres	Jeux_de_scenario_a_executer
	Square
nombre_d_iterations	5
taille_supp_de_fichier_matrice	300
block_de_flux_OD_min_a_affecter	0,1
tps_en_s_de_parours_min_d_un_troncon_a_vide	2
longueur_max_chemin_1	200

nbre_max_troncons	1500
nbre_max_de_noeuds	
num_id_noeud_max_limite	81000
nbre_max_category	80
Nbre_d_iterations_max	75
cout_gen_trajet_max	99999999
10 x tolerance_cout_gen_parours_troncon	1
cout_gener_troncon_max_par_defaut	99999999
Coeff_tps_pour_cout_generalise_trajet	25
	40
numero_max_categories	120
distance_min_entre_2_noeuds	5
ENTREES	
cout_correspondance_entre_VP_et_TC_en_MaP_2sens_indifferencie	10000

File : [other_parameters.csv](#)

Parametres	Jeux_de_scenario_a_executer
	Square
y_inverses	2
decalage_origine_x_en_metre	400
decalage_origine_y_en_metre	400
marge_des_graphes_en_metre	200

noeud_isochrone	192
seuil_min_tracage_ligne_desir	8
num_colonne_du_premier_reseau_dans_fichier_reseau	17
num_colonne_du_premier_reseau_dans_fichier_zone	10
coeff_largeur_trait_x	60
taille_texte_numero_noeud	18
coeff_largeur_trait_flux	4
coeff_taille_noeud	5

File : scenarios_parameters.csv

This file has 2 parts. The first part is :

Parametres	Jeux_de_scenario_a_executer		Explications	
	Square			

Avec_calage	0			
creer_les_fichiers_arbo_0_1_2	0	0 (aucun), 1 ou 2 (tous)	toutes les matrices OD des carrefours	
creer_les_fichiers_svg	0	0 ou 1		
Time period / periode_jour_as_byte (prefixe nom mat 4)	2	1		
1	APH	hpm	AM Peak Hour	
2	PPH	hps	PM Peak Hour	
3	AADT	JO		
4	AAWT	JA		
	ATTENTION sert au nom d entree et de sortie et pour les comptages			
file_name_13	categories_troncons_12			
file_name_110	Square_res_ESPG27700_v6			
	reseau_square_espg27700_arrondi_au_m _09_zones			
	reseau_square_espg27700_arrondi_au_m _09_poles_correspondance			

The second part of the file is :

SCENARIOS (ligne+3)				
		Scenario_de_comparaison (un seul)	reseau_numero	
scenario_1	{ Name of the first scenario }	{ Name of the first scenario }	{ Number of the network }	{ Number of the matrix }
scenario_2			2	
scenario_3				
scenario_4				
scenario_5				
scenario_6				
scenario_7				
scenario_8				
scenario_9				
scenario_10				
scenario_11				
scenario_12				
scenario_13				
scenario_14				
scenario_15				
scenario_16				
scenario_17				
scenario_18				
scenario_19				
scenario_20				
scenario_21				
scenario_22				
scenario_23				
scenario_24				
scenario_25				
scenario_26				
scenario_27				

scenario_28				
scenario_29				
scenario_30				
scenario_31				
scenario_32				
scenario_33				
scenario_34				
scenario_35				
scenario_36				
scenario_37				
scenario_38				
scenario_39				
scenario_40				
scenario_41				
RESEAU (ligne+6)				
nom_reseau 1	2025			
nom_reseau 2	2027			
nom_reseau 3	2027b			
nom_reseau 4	2035a			
nom_reseau 5	2035b			
nom_reseau 6	2035c			
nom_reseau 7	2035d			
nom_reseau 8	xxxxxxx			
nom_reseau 9				
nom_reseau 10				
nom_reseau 11				
nom_reseau 12				
nom_reseau 13				

nom_reseau 14				
nom_reseau 15				
nom_reseau 16				
nom_reseau 17				
nom_reseau 18				
nom_reseau 19				
nom_reseau 20				
nom_reseau 21				
nom_reseau 22				
nom_reseau 23				
nom_reseau 24				
MATRICES (ligne+7)				
DOSSIERS	Debut nom fichier			
Nom matrice Partie 1	matrix_square_9_			
Nom matrice Partie 2				
nom_horizon_matrice 1	2025			
nom_horizon_matrice 2	2027			
nom_horizon_matrice 3				
nom_horizon_matrice 4				
nom_horizon_matrice 5				
nom_horizon_matrice 6				
nom_horizon_matrice 7				
nom_horizon_matrice 8				
nom_horizon_matrice 9				
nom_horizon_matrice 10				
nom_horizon_matrice 11				
nom_horizon_matrice 12				
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nom_horizon_matrice 14				
nom_horizon_matrice 15				

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nom_horizon_matrice 32				
nom_horizon_matrice 33			pas servi	
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nom_horizon_matrice 39				
nom_horizon_matrice 40				
nom_horizon_matrice 41				

10. HOW TO CREATE A NETWORK – WITH QGIS