

A BRIEF GUIDE ON THE USE OF THE GEOINFORMATION SYSTEM QGISgp

Part 1.

QGISgp built on the GIS QGIS and DBMS PostgreSQL integration..

QGISgp environment uses Ukrainian law and can adapt to the requirements of other users/legislations.

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- 1.2. Drawing existing restriction zones
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- 1.8. Working with the archive of deleted objects. Restoring deleted objects
- 1.9. Calculation of technical and economic indicators (TEI) the master plan

2. STRATEGIC ENVIRONMENTAL ASSESSMENT (SEA)

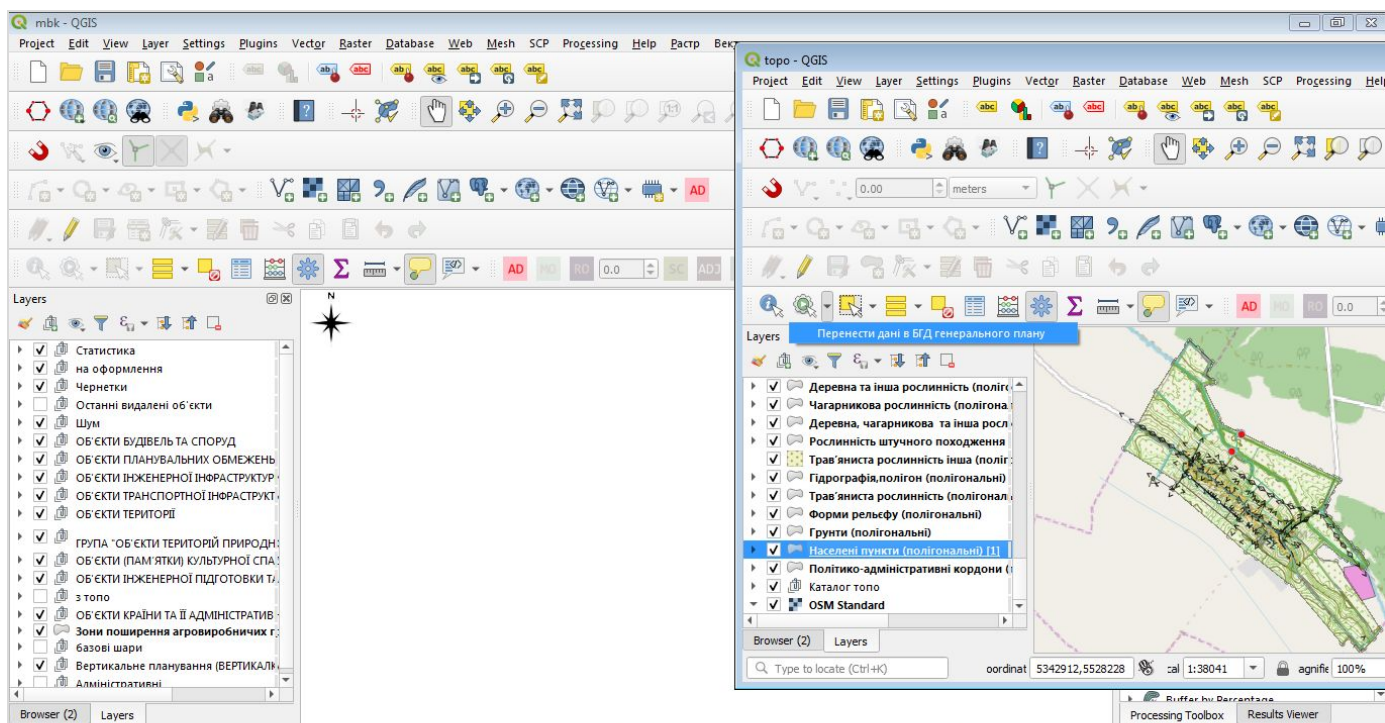
- 2.1. Integral assessment



1. SETTLEMENT MASTER PLAN SPATIAL SCHEME PREPARATION IN QGISgp ENVIRONMENT

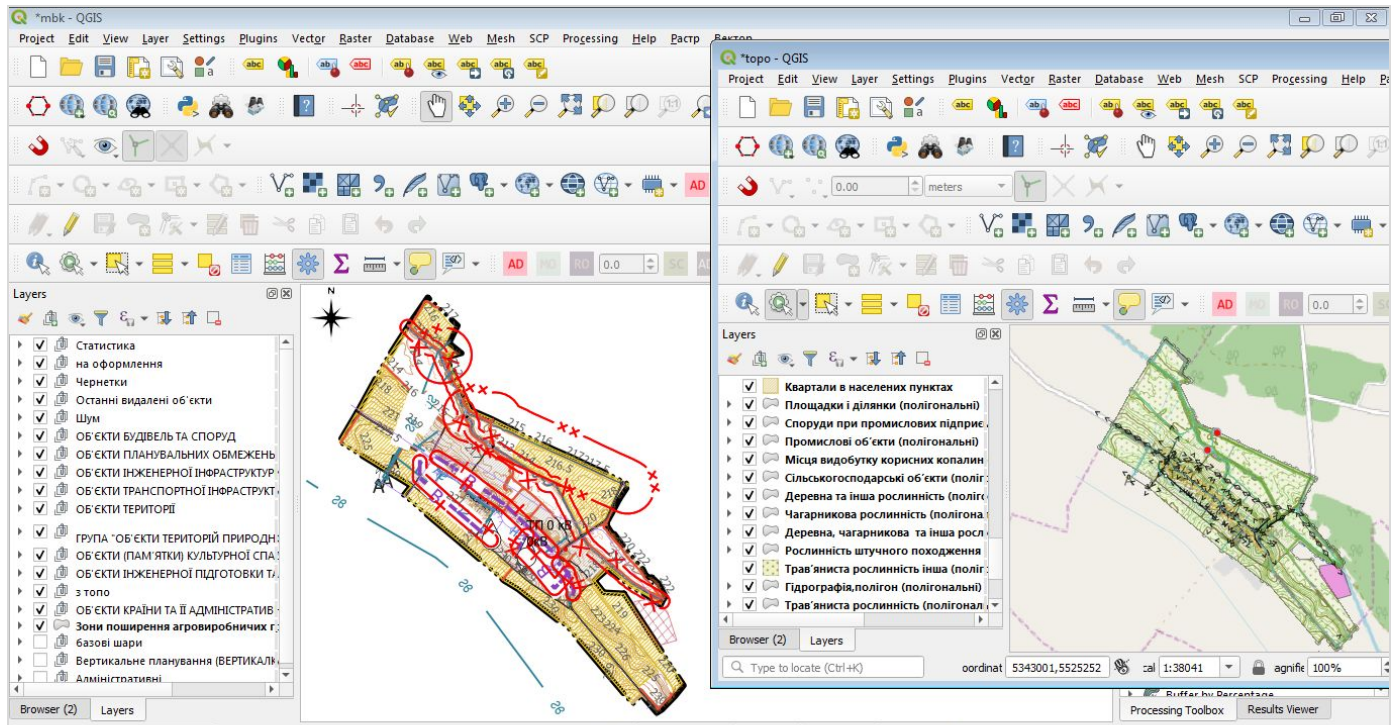
1.1. Transferring geospatial data from the topographic database to the master plan database

You can copy data from the topographic database to the master plan database via the *.qgs file of topographic data by calling the function "Transfer data to master plan GDB".



The data will be transferred in a few seconds after function was called.





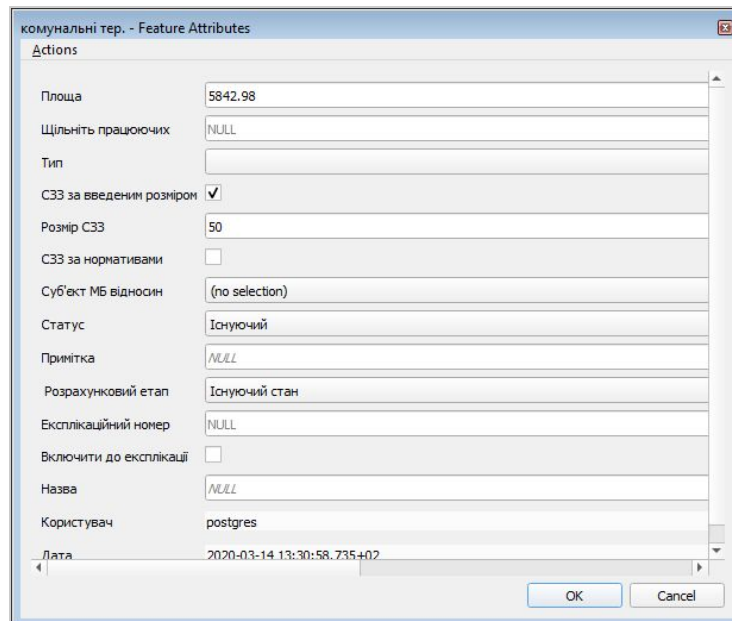
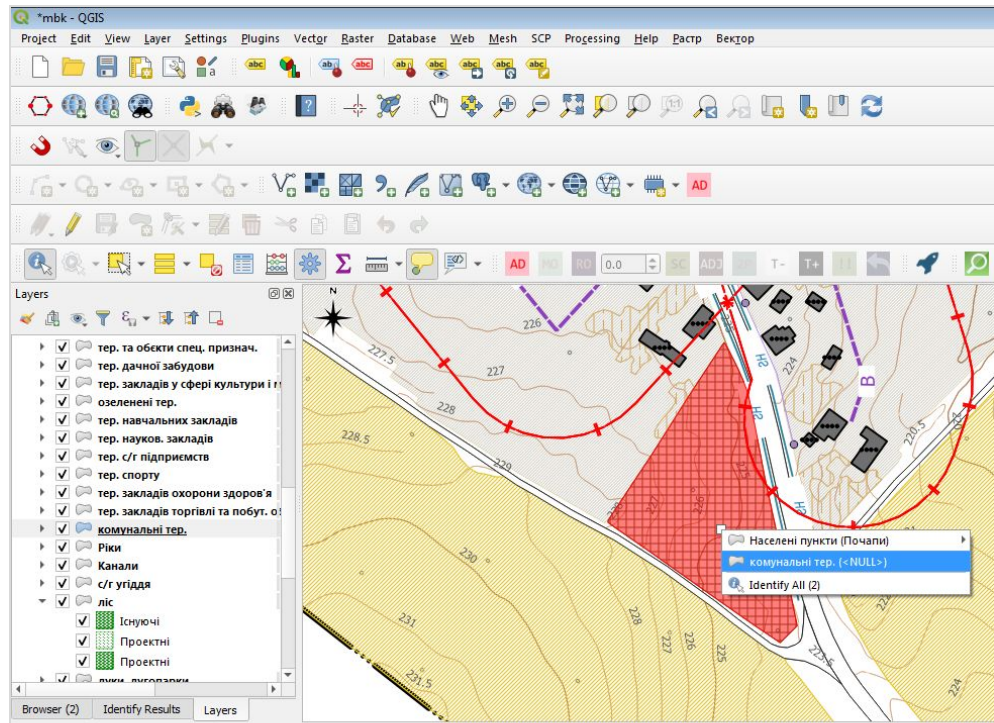
During the data transferring restriction zones are automatically built, in case there is sufficient information for it in the topographic database. For example, restriction zone size around power lines depends on the voltage, so that zones build depending on the voltage specified in the power line attributes, etc.

1.2. Drawing existing restriction zones

To build restriction zone around mode-forming object you can choose one of two ways:

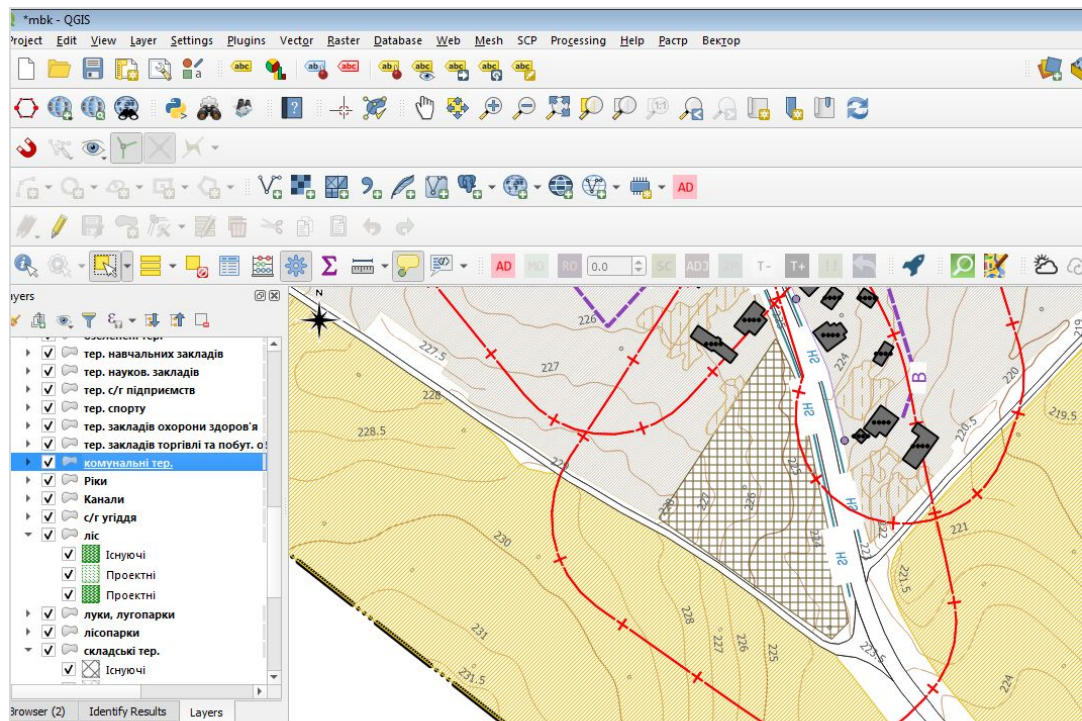
- define zone size and enable checkbox "Build by size" in mode-forming object attributes. In this case, the restriction zone will be automatically built using the user specified zone size.
- specify the mode-forming object type (it's characteristics) and enable checkbox "Build by standard". The object's restriction zone size will be defined by legal norms, based on the given object characteristics. For this purpose, QGISgp has a normative database, which stores legislation requirements for the size of restriction zones.





The zone will be built.





Note.

Mode-forming objects and restriction zones are dynamically linked in the QGISgp database.

Deleting restriction zones also reflects in the attributes of the mode-forming object (the corresponding checkbox will be disabled).

Disabling the checkbox "Build by size" or "Build by standard" in the attributes of the mode-forming object, automatically deletes the corresponding zone.

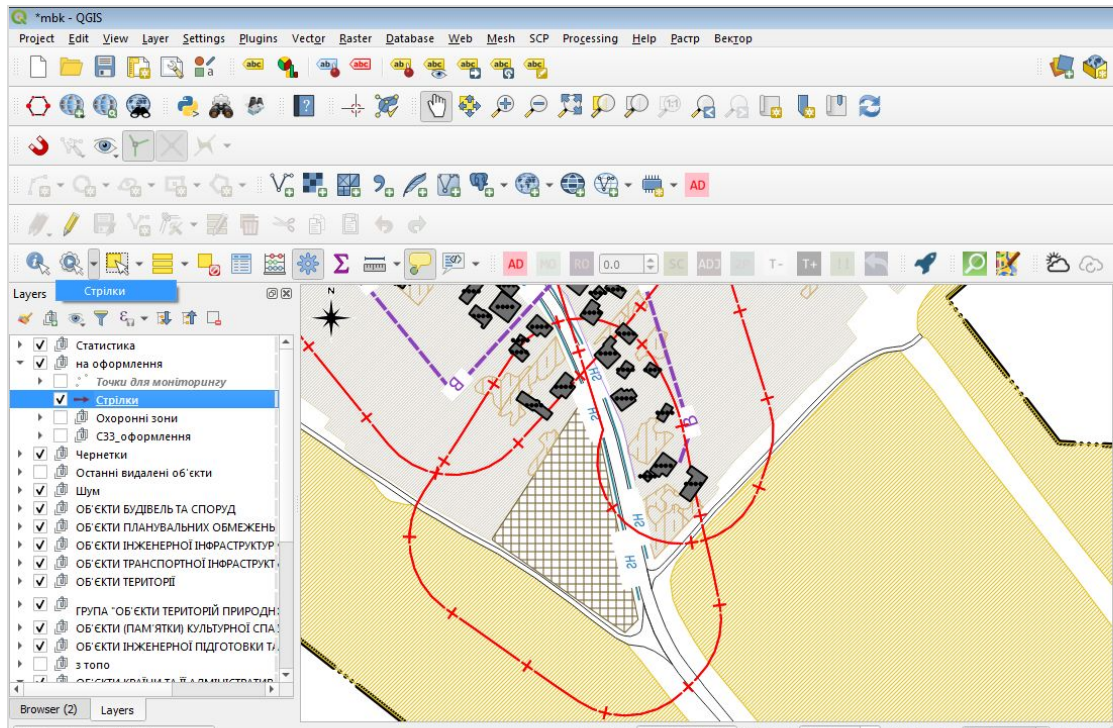
If you change the properties of the mode-forming object, the size of the corresponding restriction zone also changes following the normative database (if the checkbox "Build by standard" enabled) or the new zone size (if the checkbox "Build by size" enabled).

1.3. Setting restriction zones display

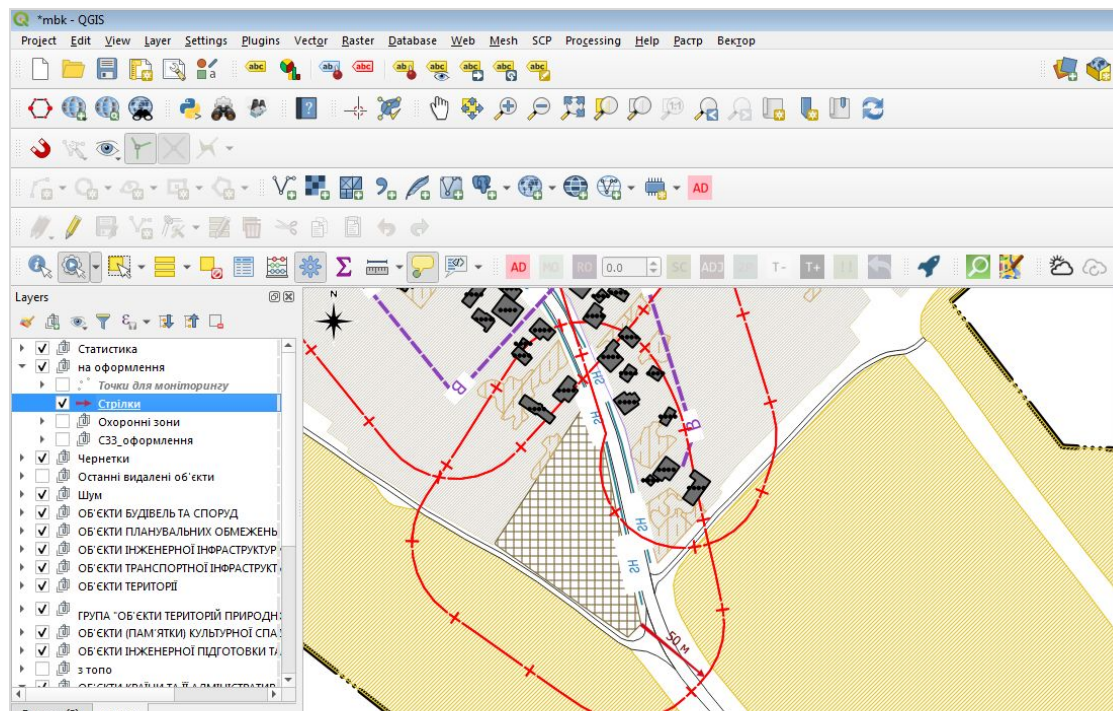
1.3.1. Arrows display

If you need to add on map dimension lines and arrows for showing restriction zone size, call the "Arrows" function:





Arrows will be added to the database in the “Arrows” layer.

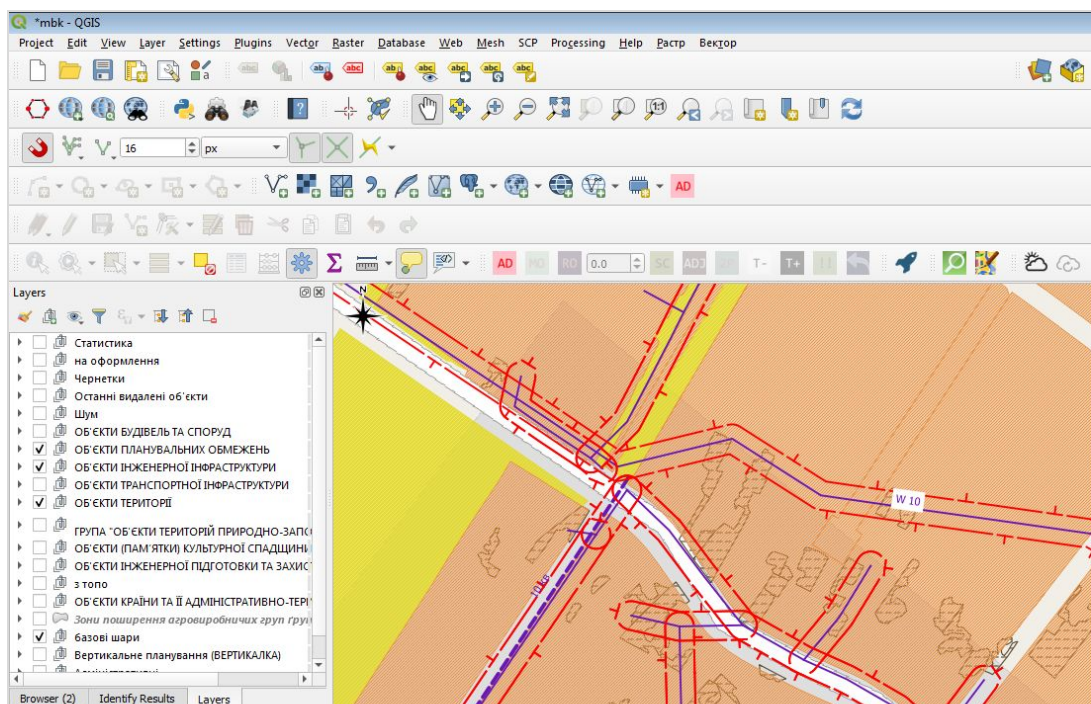


1.3.2. Visualization of merged restriction zones



Restriction zones are associated with the mode-forming objects.

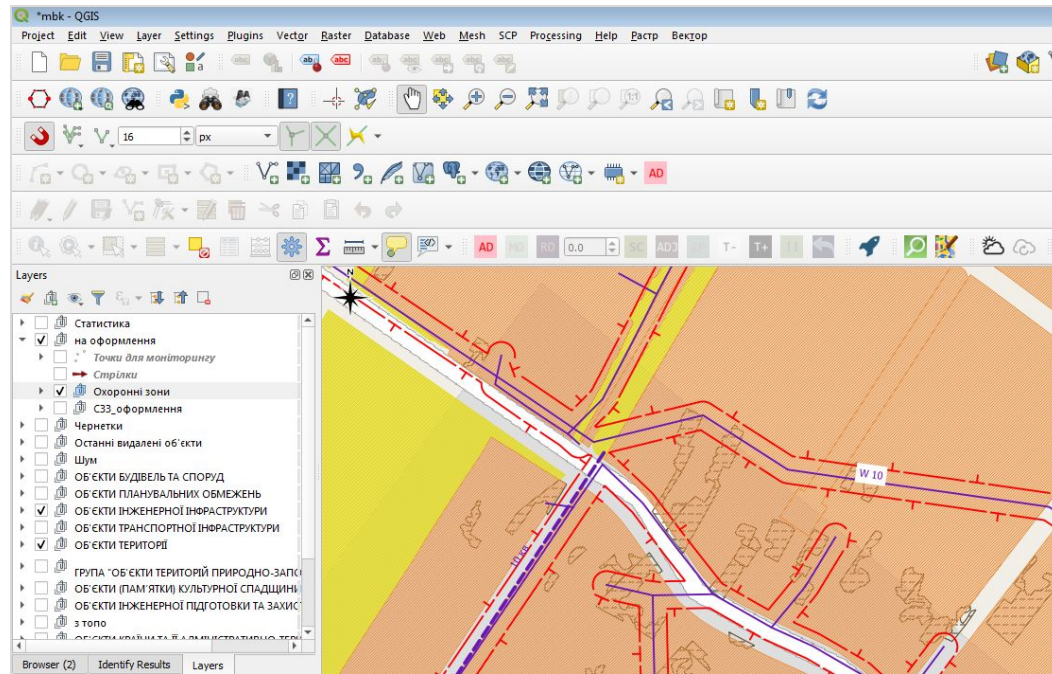
Sometimes visualization of the master plan scheme requires restriction zones to be shown as one polygon, just for better perception.



To do this, navigate to the “design” layer group, composed of the restriction zone geometries by their types.

These layers are dynamic, so they are automatically updated after any changes in connected restriction zones:





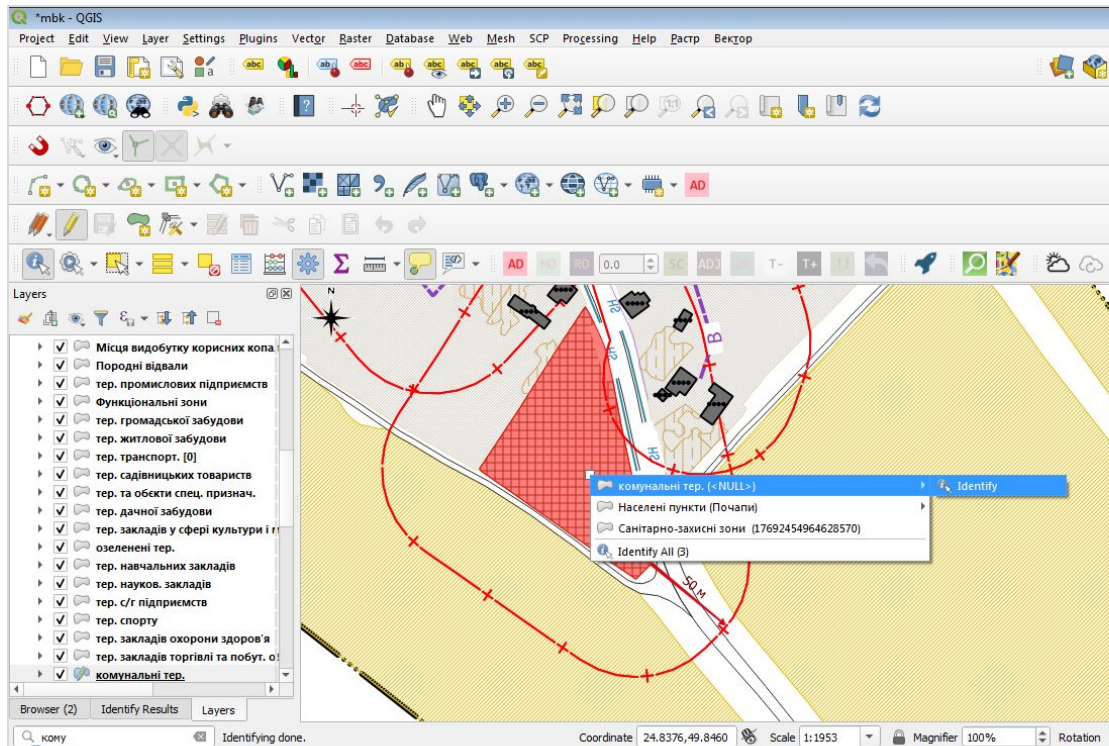
1.4. Explication formation

To add an object to explication, enable checkbox "Include to the explication" in its attributes.

You can specify an object explication number either in attributes or in the "Explication" table.

To show the object name in the "Explication" table, you should fill the objects "Name" attribute or the "Name" field in the "Explication" table.





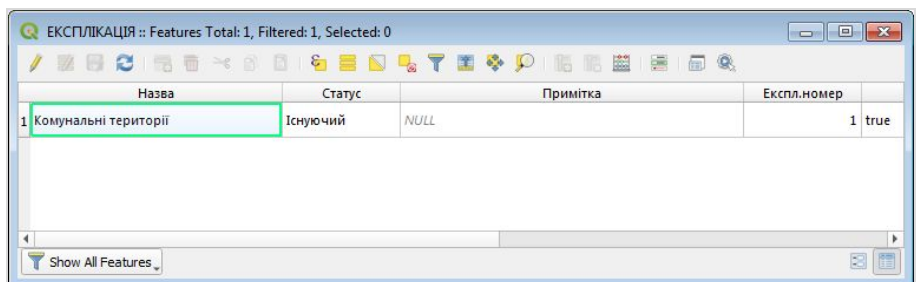
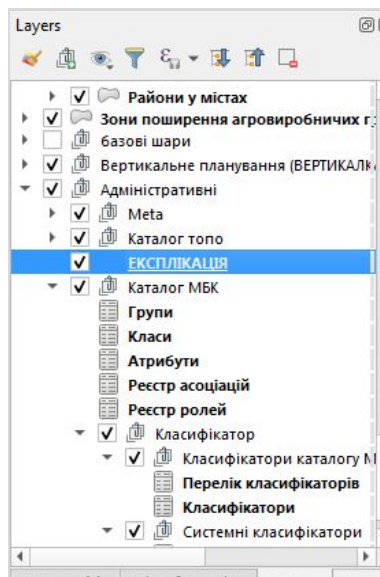
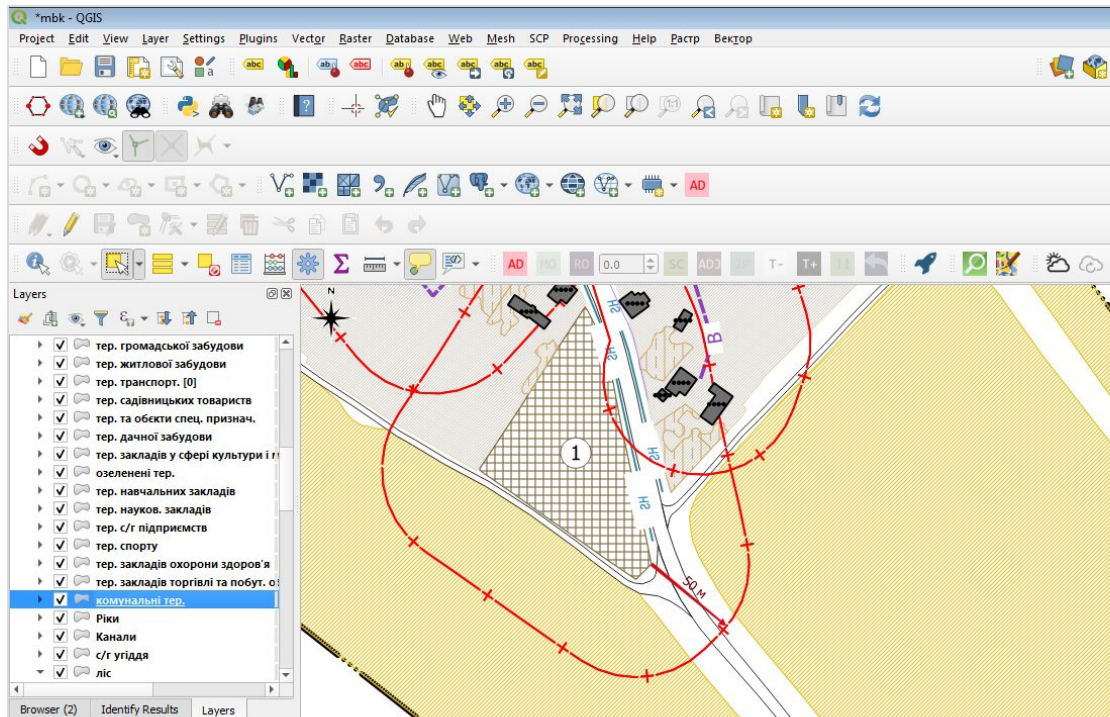
коммунальні тер. - Feature Attributes

Actions

Площа	5842.98
Щільність працюючих	NULL
Тип	
СЗЗ за введенням розміром	☒
Розмір СЗЗ	50
СЗЗ за нормативами	☐
Суб'єкт МБ відносин	(no selection)
Статус	Існуючий
Примітка	NULL
Розрахунковий етап	Існуючий стан
Експлікаційний номер	1
Включити до експлікації	☒
Назва	Комунальні території
Користувач	postgres
Дата	2020-03-14 13:30:58.735+02

OK Cancel



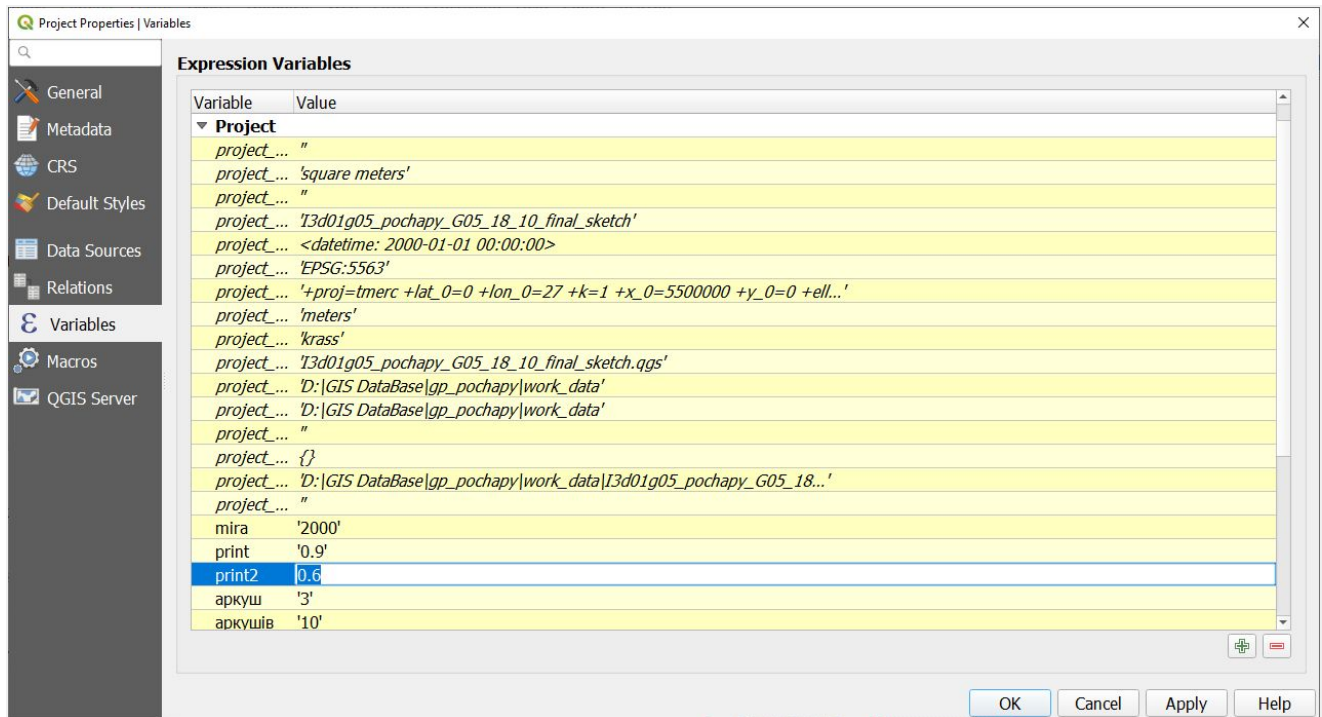


1.5. Project print

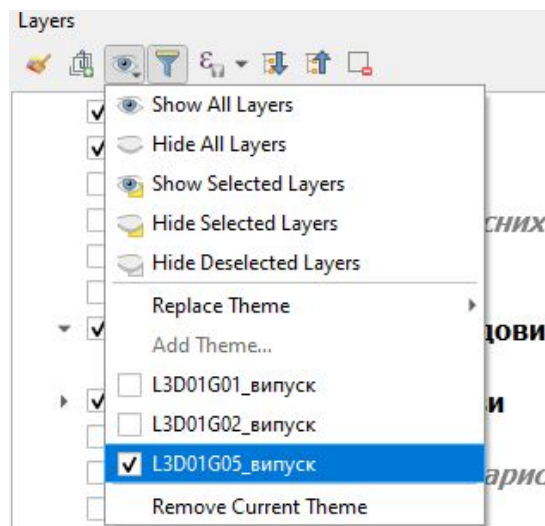
QGISgsp allows you to automatically compose an image of a spatial scheme and split it into parts that are proportional to the working width of your plotter.

To do this first specify the width of the plotter's workspace in the variables "print" and, if necessary, "print2". The width should be specified in meters.



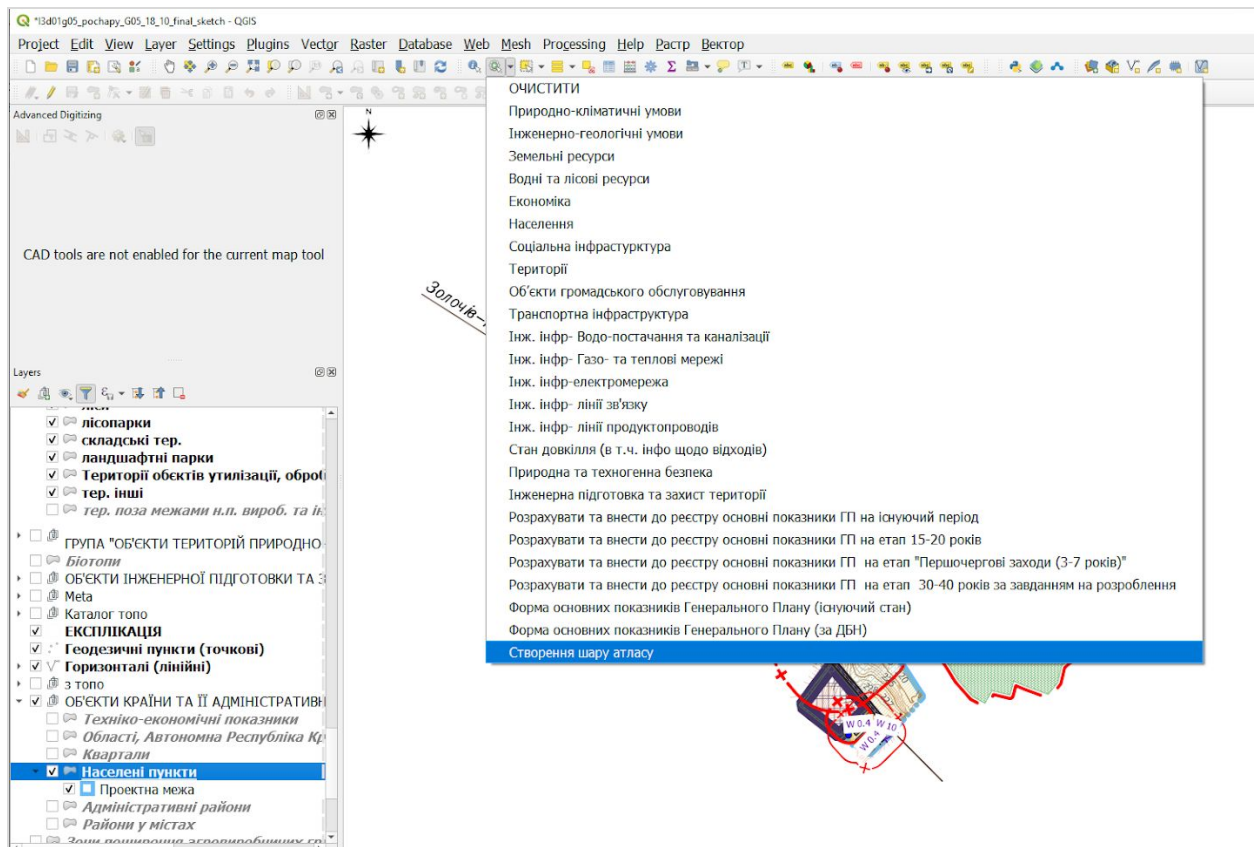


In the Layers panel menu select a map theme that is relevant to the current type of drawing you want to print (layers combination).



The next step is to call the “Create Atlas Layer” function.

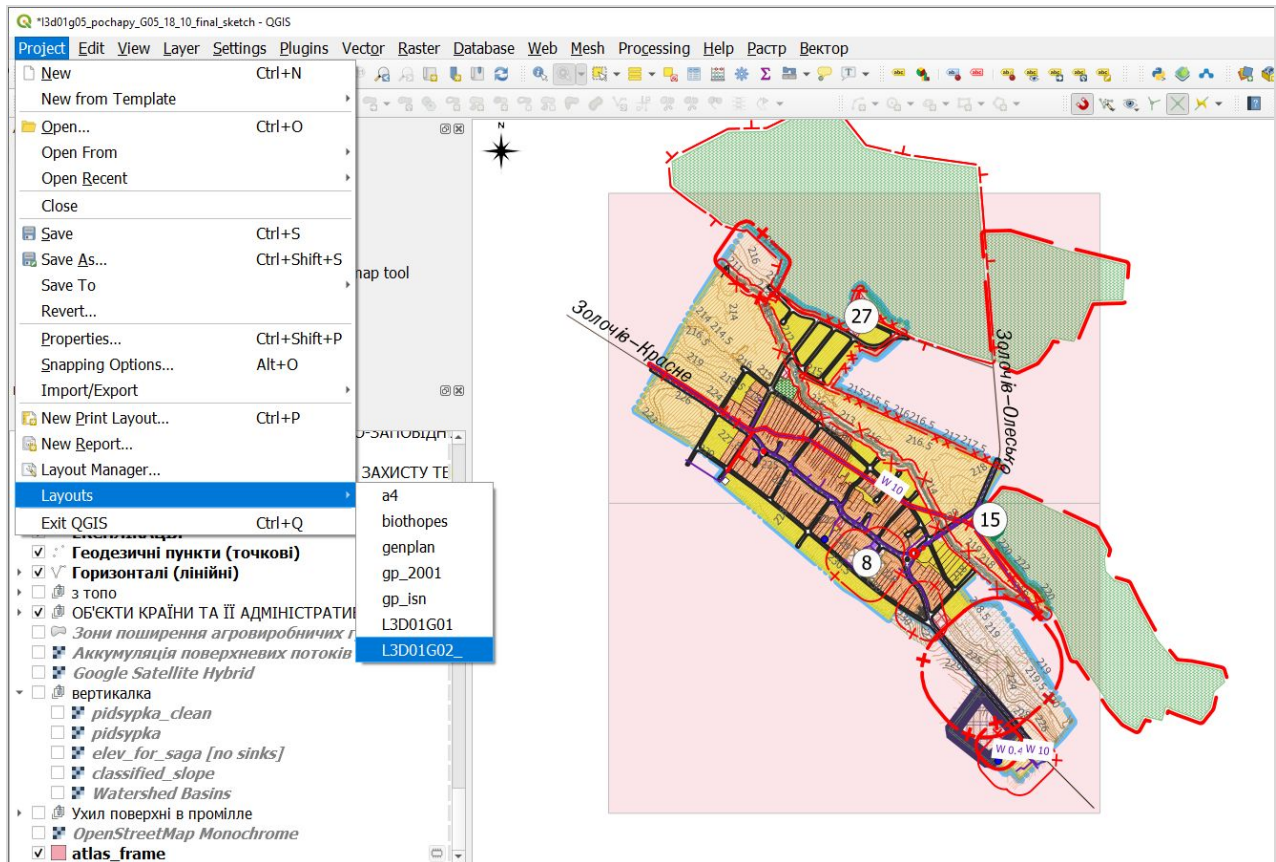




An auxiliary layer “atlas_frame” will be created and arranged according to the proportions of the settlement boundary. The width of the atlas polygons corresponds to the width of the paper roll you specify in the variables.

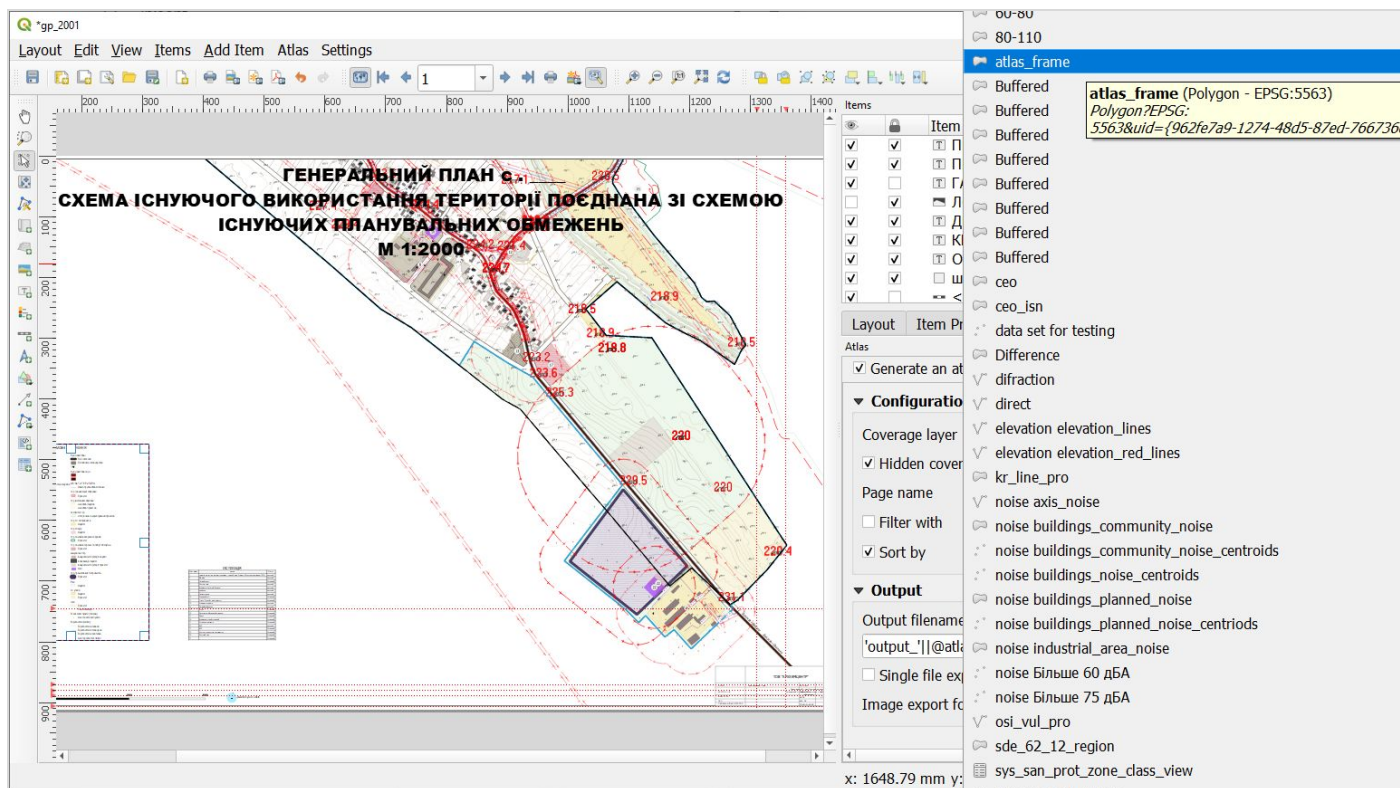
After that, open the layout needed for the print project, for example, the “Current state” scheme.





Select the previously created “atlas_frame” layer as the atlas source.

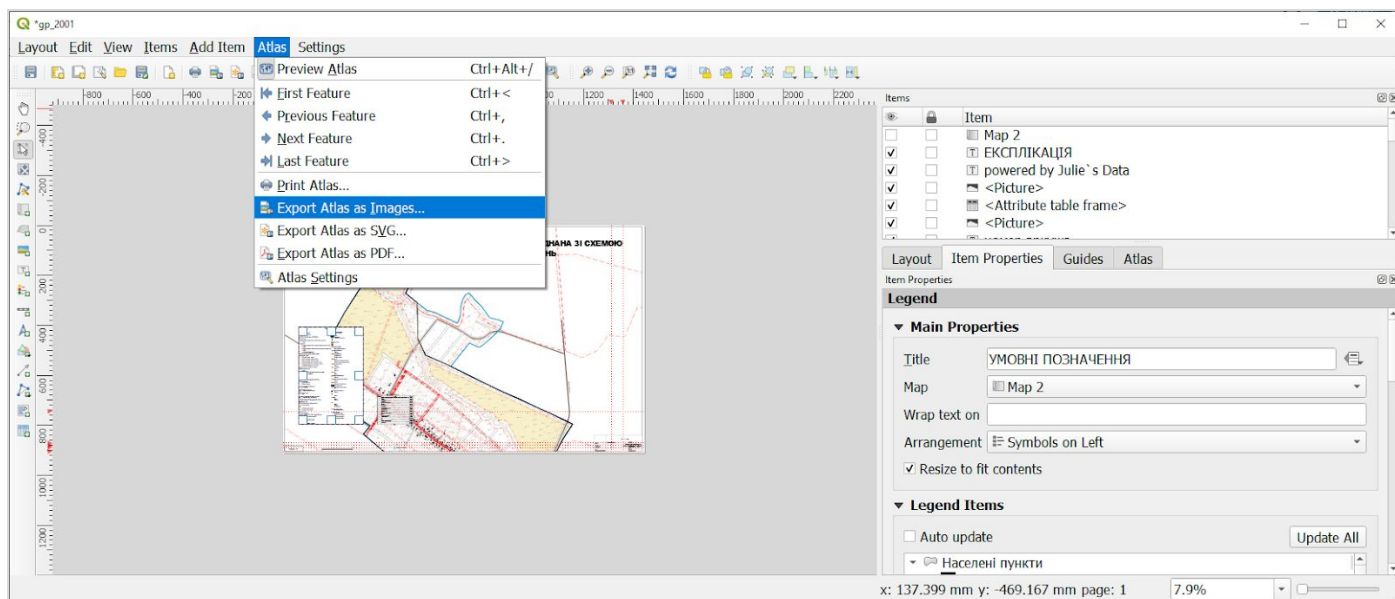




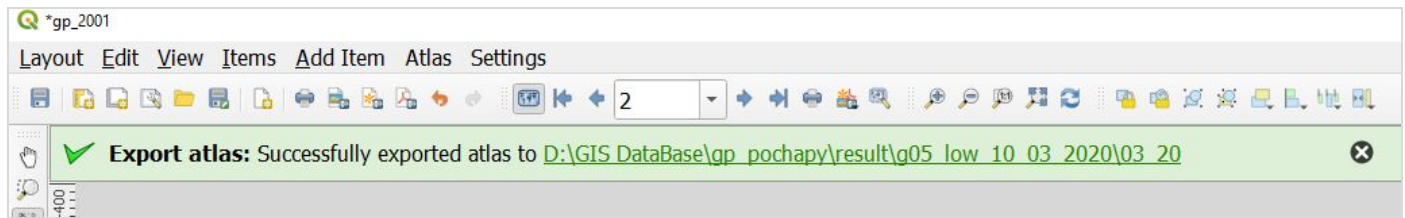
Place the legend and explication as you need.

The required data in the print template such as settlement name, performer, year etc. will be added from the project variables automatically.

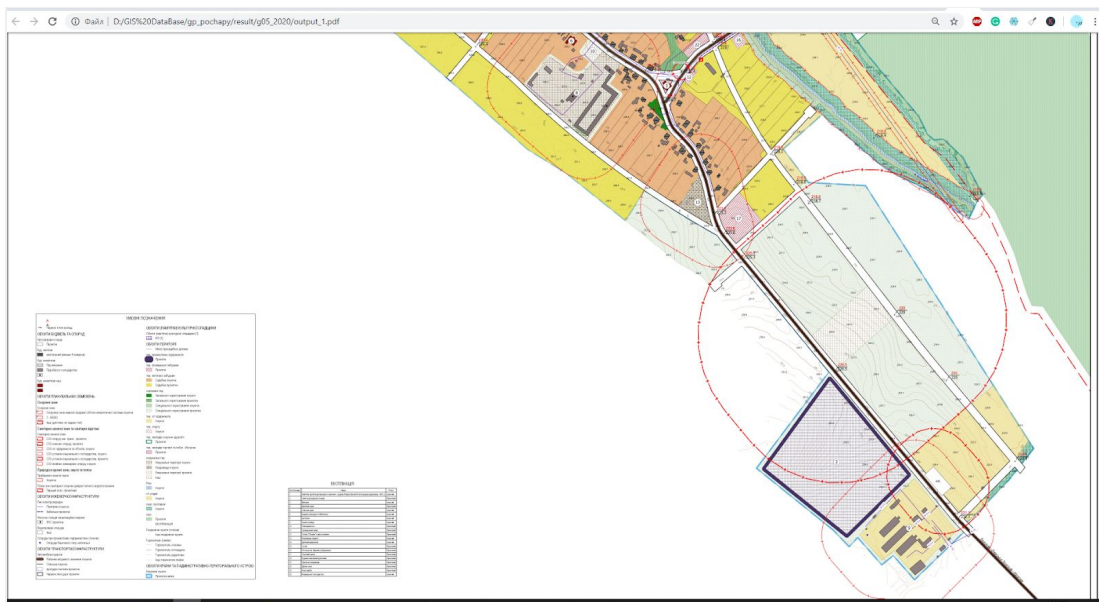
Select the project print format, folder to save and print the project in a file.



After project printing ended, a message “Successfully exported atlas to ...” appears:



Follow the link and check the result.



1.6 Drawing of project street axes, polygons of streets (carriageway), red lines¹

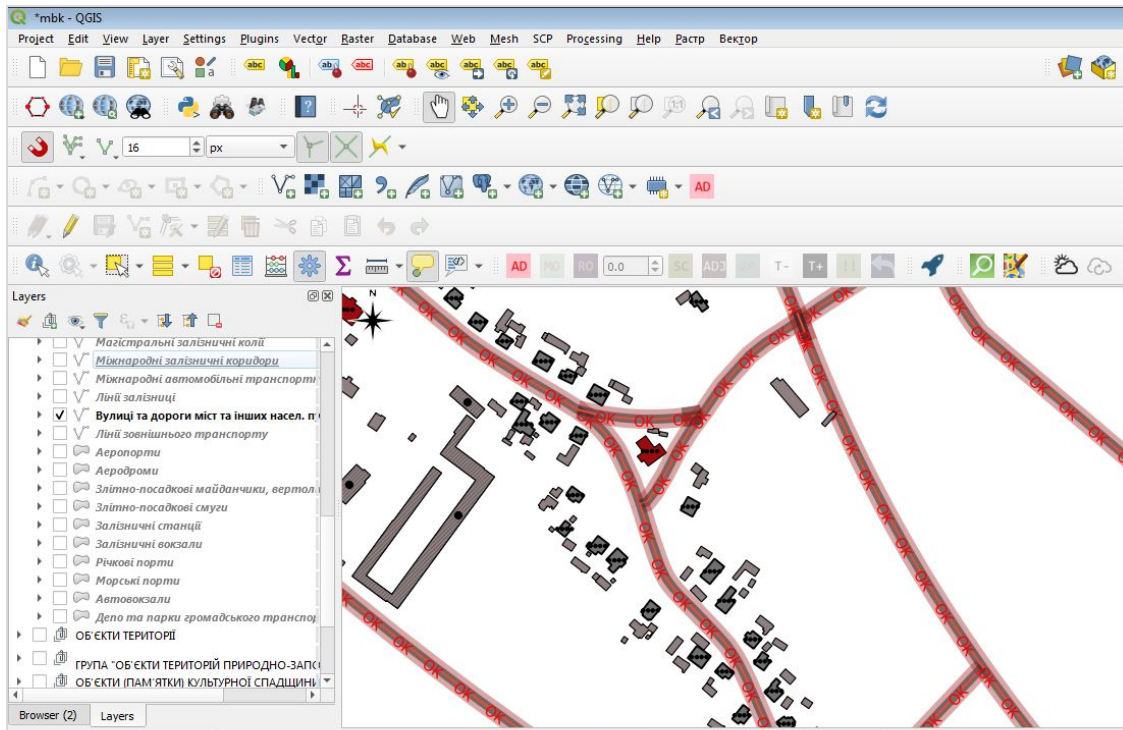
Start drawing the road axes and indicate the red lines and road (carriageway) width and whether deadlock is needed.

Вулиці та дороги міст та інших насел. пунктів (осі) - Feature Attributes	
Actions	
Назва вулиці	Головна
Категорія	Вулиці і дороги місцевого значення
Суб'єкт МБ відносин	Органи місцевого самоврядування
Статус	Запроектований
Розрахунковий етап	Існуючий стан
Користувач	postgres
Дата	2020-03-15 17:26:36.85+02
Червона лінія зліва	8
Червона лінія зправа	8
Покриття зліва	3.75
Покриття зправа	3.75
Будувати тупик	☐

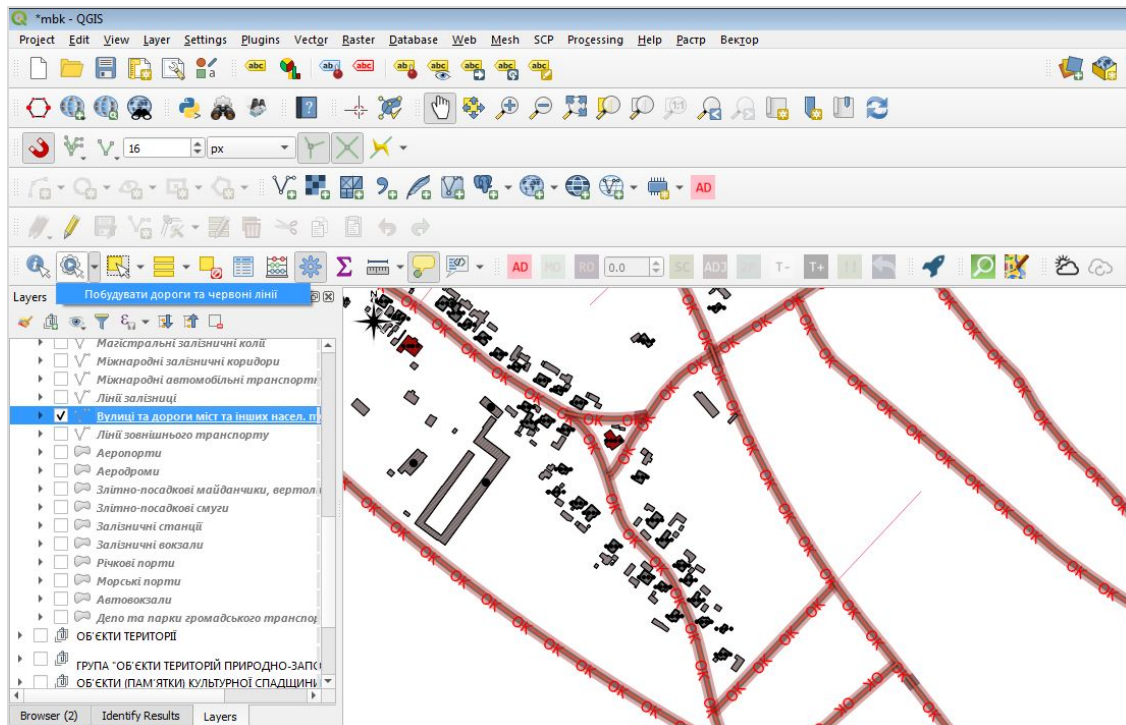
When editing axis attributes such as red lines and road width or deadlock presence, the symbology of the axes layer will render the axis as a composite street object with corresponding attribute locations and dimensions at the map scale.

¹ Red lines are defined by national urban planning documentation as boundaries of existing and projected streets, roads, squares that delineate residential territories, neighborhoods, and areas of other purposes.

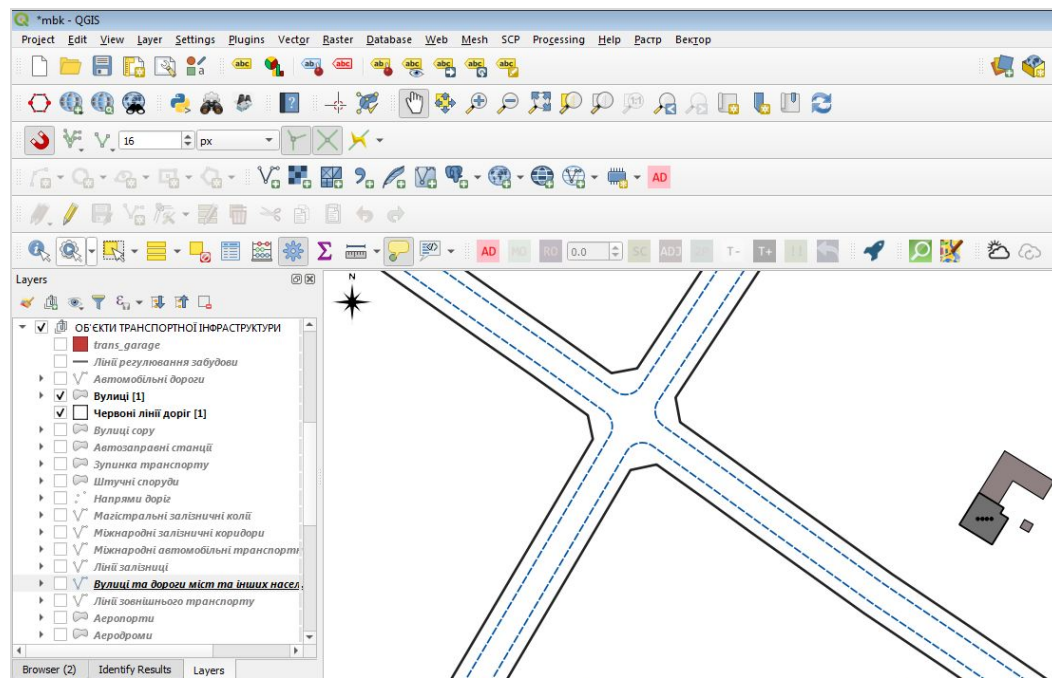
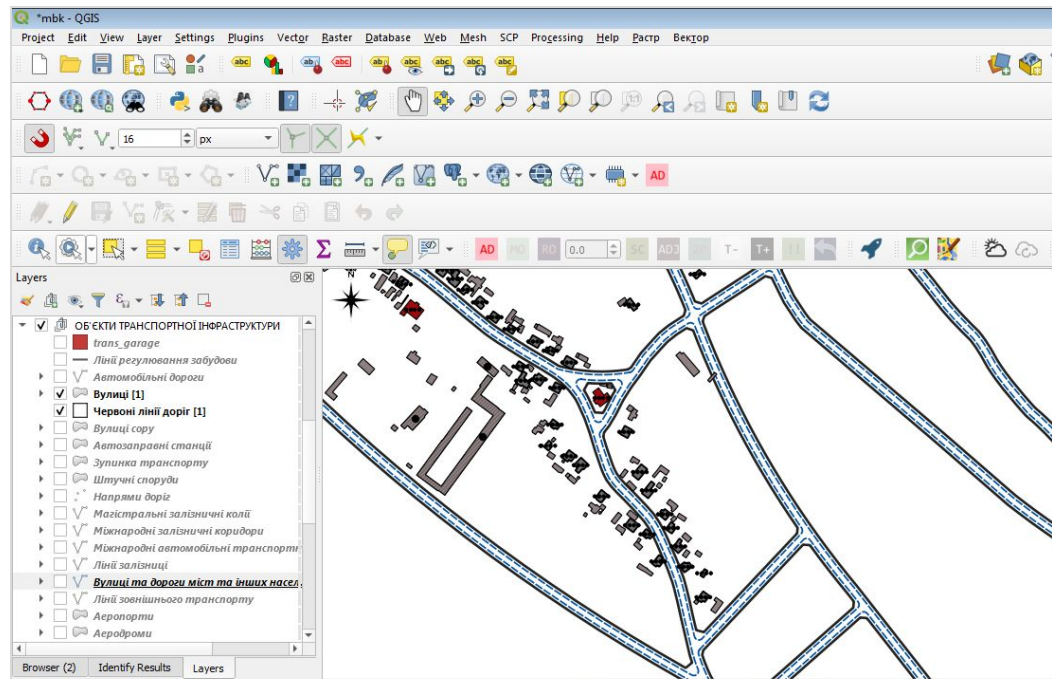




After you draw all axes with roads (carriageway) and red lines width, call “Red lines and roads creation” function:

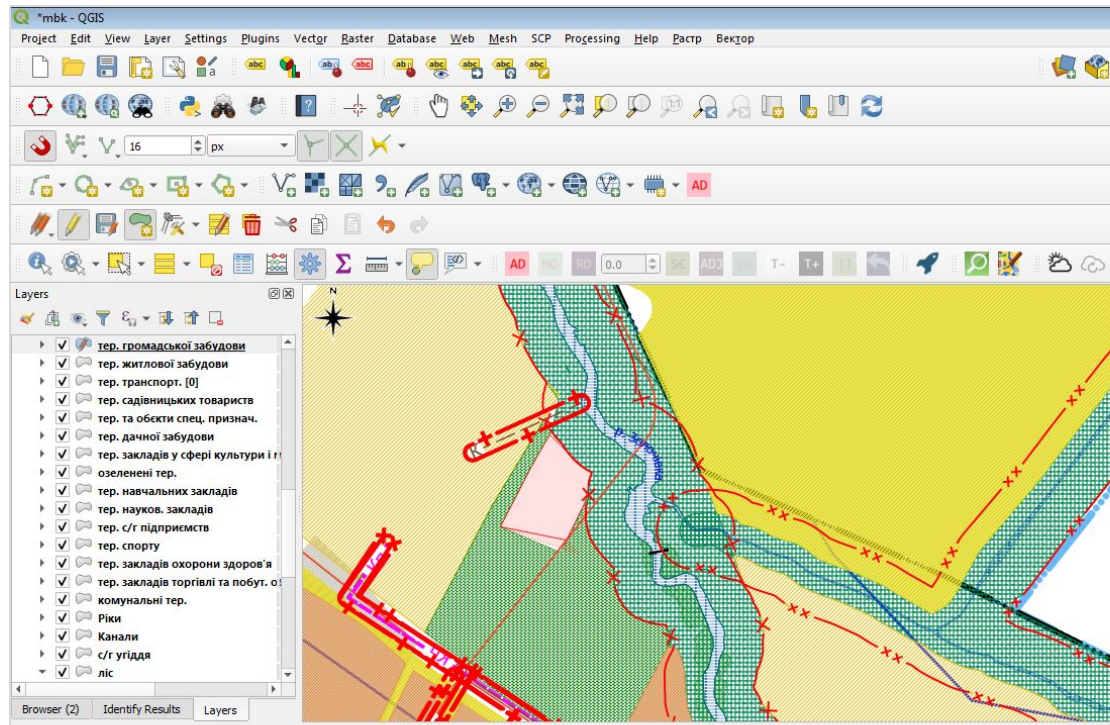


As a result, street and red line geometries will append to relevant layers. Polygon corners on crossroads will be properly beveled.

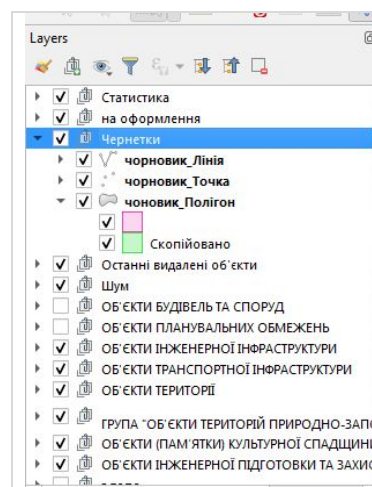


1.7. Drawing of the planned objects. Draft layers usage

To add a new object, activate the editing mode for the desired layer and start drawing:



Also, you can use draft layers stored in the “Draft” group:



You can add various objects to the draft layers and specify their status, notes, and the layer (database table) to which the object belongs.



чоновик_Полігон :: Features Total: 3, Filtered: 3, Selected: 0

	код класу	id	примітка	користувач	дата редагування	Скопіювати	Статус	Додано
1	Території гром...	17	NULL	postgres	2020-03-14 18:55:37.102+02	false	Існуючий	false
2	Складські території	18	NULL	postgres	2020-03-14 18:56:28.167+02	false	Запроєктований	false
3	Території житл...	19	NULL	postgres	2020-03-14 18:56:28.167+02	false	Запроєктований	false

Show All Features

If you decide to copy a number of objects from the draft layer to work layers, you just need to enable the "Copy" checkbox.

чоновик_Полігон - Feature Attributes

Actions

код класу: Території громадської забудови

id: 17

примітка: NULL

Статус: Існуючий

Скопіювати: ☒

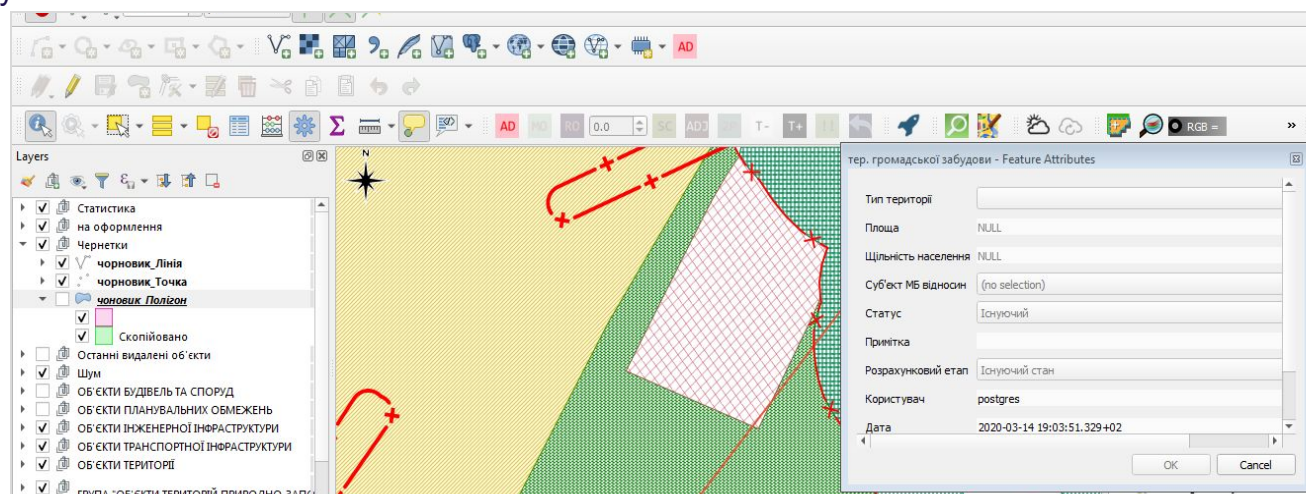
Додано: ☐

користувач: postgres

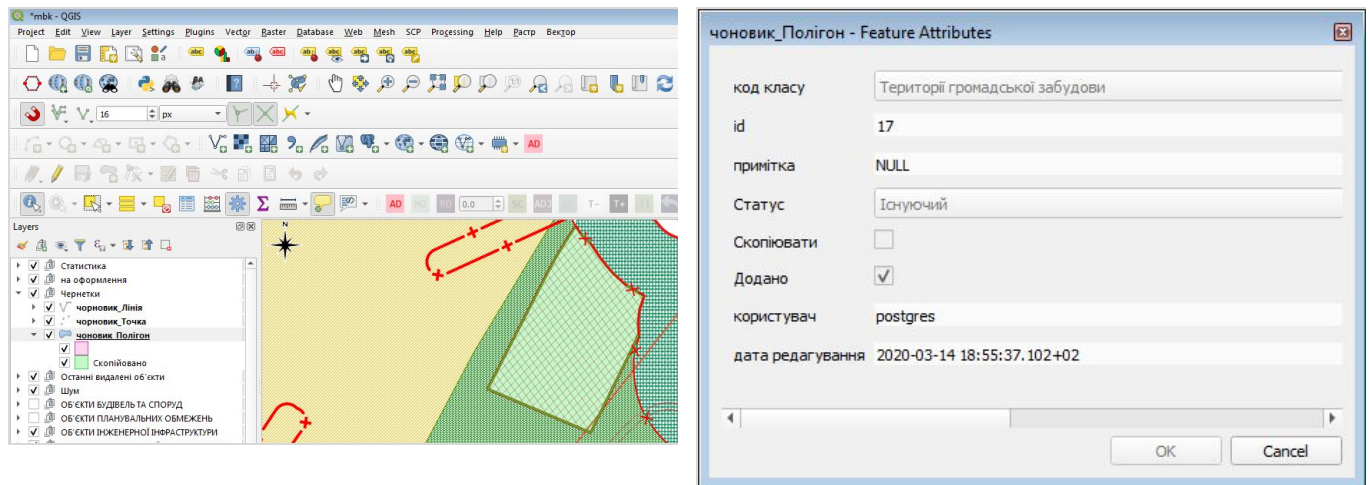
дата редагування: 2020-03-14 18:55:37.102+02

OK Cancel

After that the objects will be separated by layers specified in the attributes of the draft layer:

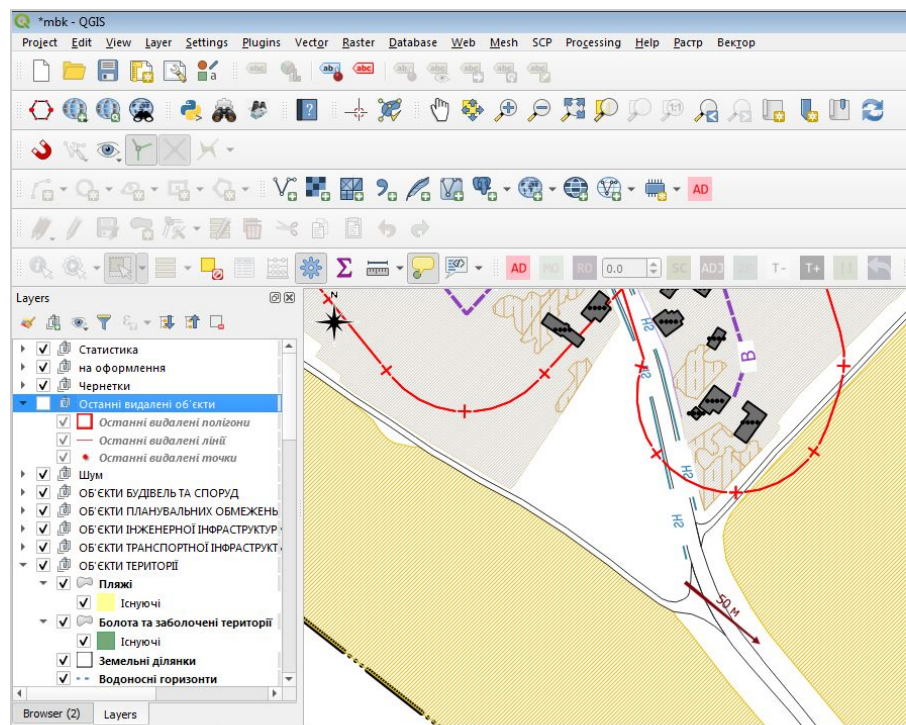


Transferred objects in the draft layer are highlighted green with “Added” checkbox enabled:

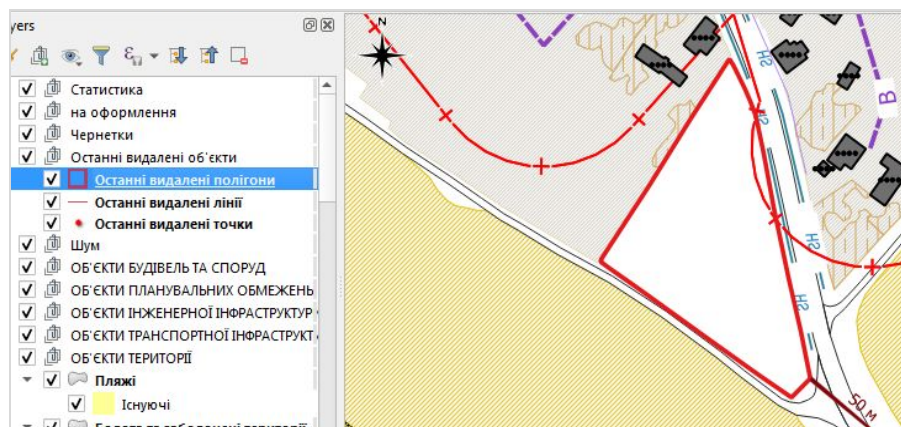


1.8. Working with the archive of deleted objects. Restoring deleted objects

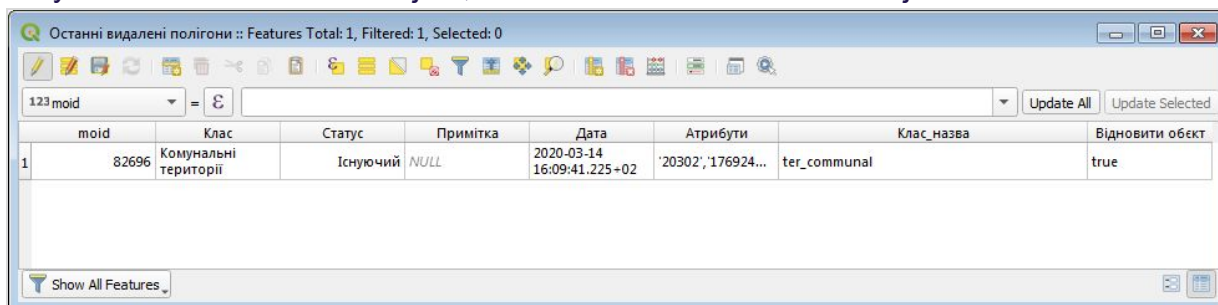
If you accidentally delete an object and want to restore it, go to the group "Recent Deleted Objects". It contains three layers (DB tables) that store deleted polygonal, linear, and point objects.



All deleted objects are highlighted in red color when these layers are switched on.

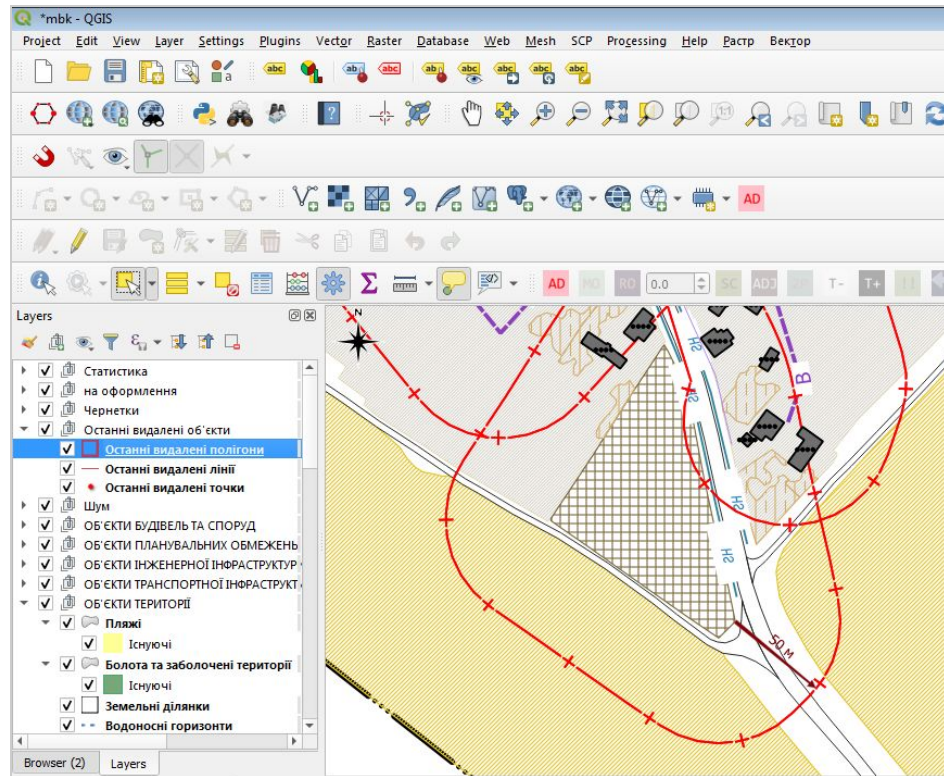


If you want to restore an object, enable checkbox “Restore Object”.



.The object will be restored with all attributes it had before it was deleted, including the restriction zones. After restoring the object will be deleted from the table "Recent Deleted Objects".

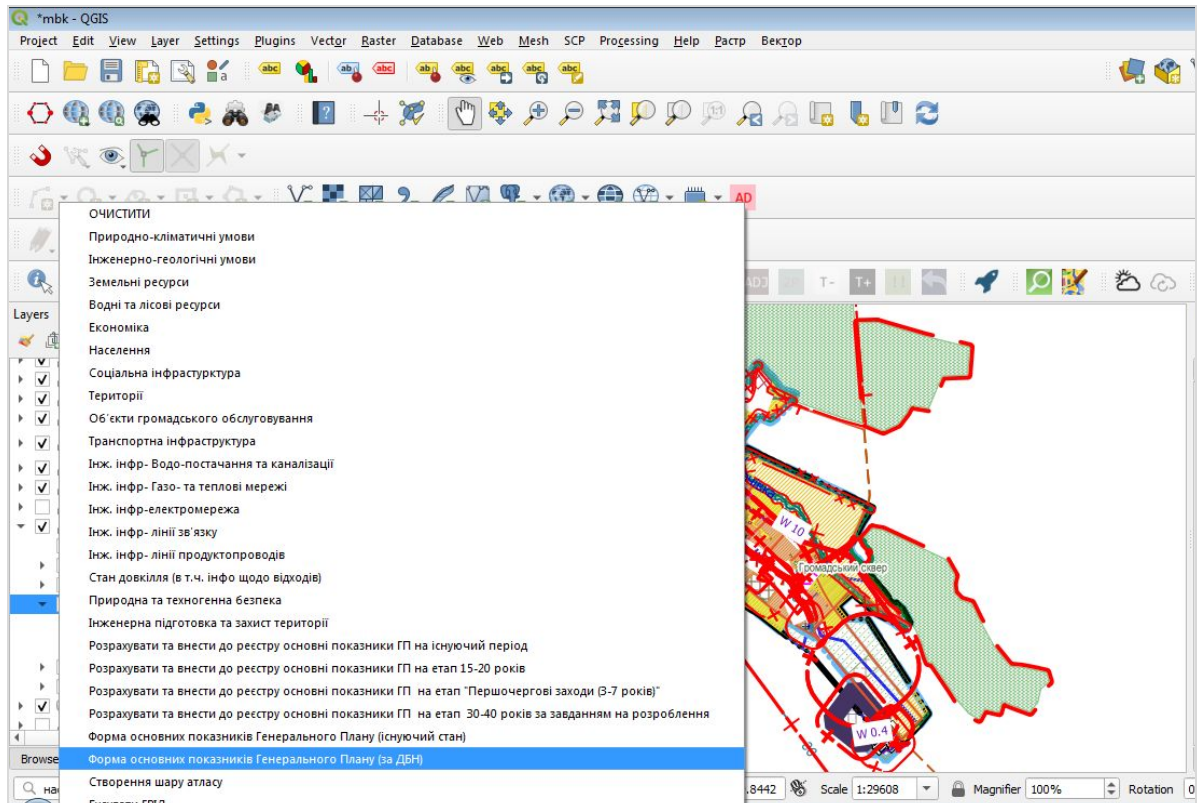




1.9. Calculation of technical and economic indicators (TEI) of the master plan

To calculate TEI and save them in * doc file format, call for a number of relevant functions, such as: “Calculate TEI for the current state”, “Calculate TEI for a period of 15-20 years” and “Form of basic technical and economic indicators by State building codes”.





As a result, the technical and economic indicators will be saved to *.doc.



city_indicators_dbn - Microsoft Word

Робота стабі...

Файл Главная Вставка Разметка страницы Ссылки Рассылки Рецензирование Вид Конструктор Макет

Вставить

Буфер обмена

Шрифт

Абзац

Стили

Экспресс-стили Изменить стили Редактирование

Таблица

ФОРМА ОСНОВНИХ ПОКАЗНИКОВ ГЕНЕРАЛЬНОГО ПЛАНА

Ч.ч.	Назва показника	Одиниці виміру	Існуючий стан	Етап 15–20 р.
1	Населення	тис. осіб	0	0
2	Територія в межах населеного пункту, всього:	га	263.29	287.781
	у т.ч.: житлової забудови, всього	»	60.33	91.414
	садибної	»	60.33	91.414
	блокованої	»	0	0
	багатоквартирної	»	0	0
	Громадської забудови, всього	»	0.274	10.362
	Виробничої, всього	»	0	0
	Комунальної, всього	»	3.107	5.217
	Складської, всього	»	0	0
	Транспортної інфраструктури, всього	»	0	0
	у т.ч. вулично-дорожньої мережі	»	0	0
	зовнішнього транспорту	»	0	0
	Ландшафтно-рекреаційної та озелененої, всього	»	0.182	1.907

Страница: 1 из 5 Число слов: 670 украинский 90%

2. Strategic Environmental Assessment (SEA)

More options for using GIS for SEA will be considered in another part of this guidance.

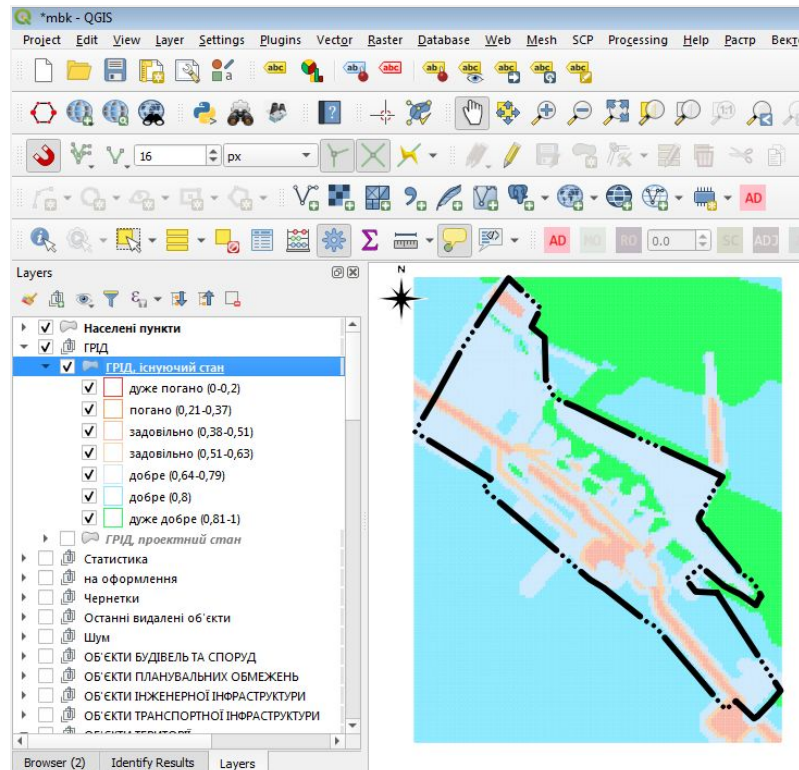
2.1. Integral assessment

In the first phase of the SEA, you can make a preliminary assessment of the existing environmental state, which helps you to design project decisions and compare them using the “Integral assessment” function. This function uses grid modeling and fuzzy assessment of the environmental impact of objects based on their spatial location within the settlement.

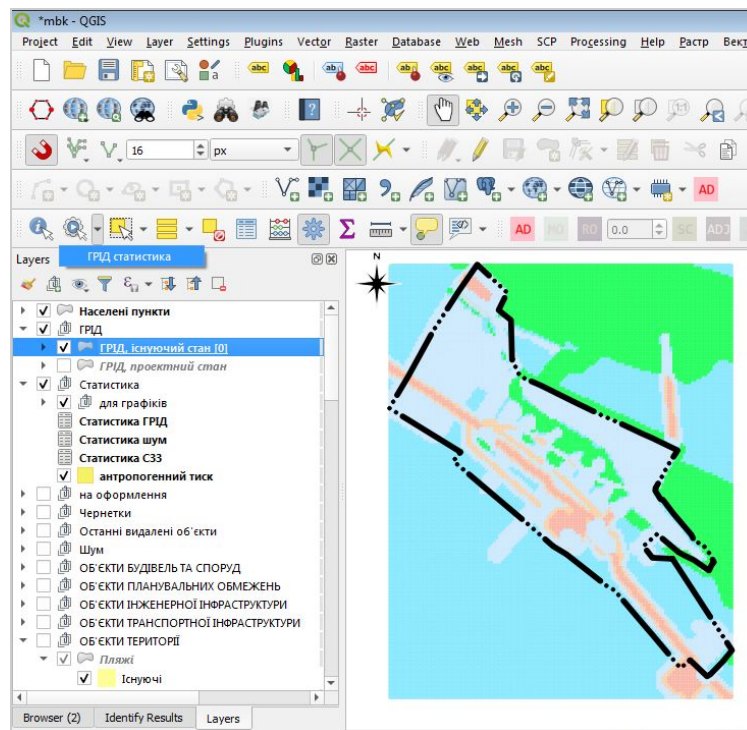
To build a grid for an existing state, go to the “Settlements” layer and call the function “Integrated assessment of existing state”.

The function will process the result for a few minutes, after which the grid will be built (grid layer, existing state).

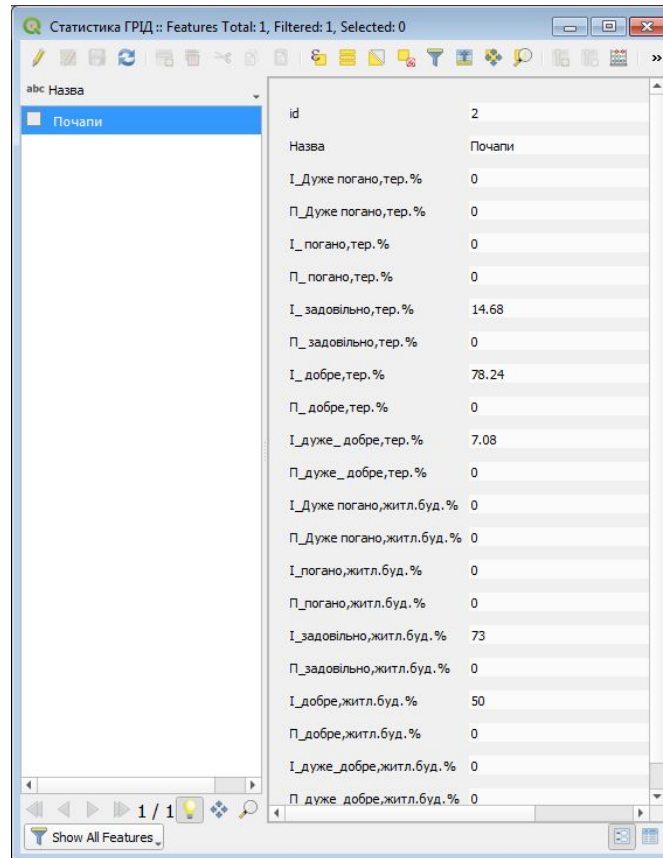




To estimate which of residential buildings, residential areas, and parts of the settlement falls into different zones of the grid model (ranging from "very bad" to "very good"), you can call the "Grid statistics" function for statistics calculation.



Go to “Grid statistic” table and view the data you have received. Fields with “I_” characterize the existing state, fields with “П_” project state.

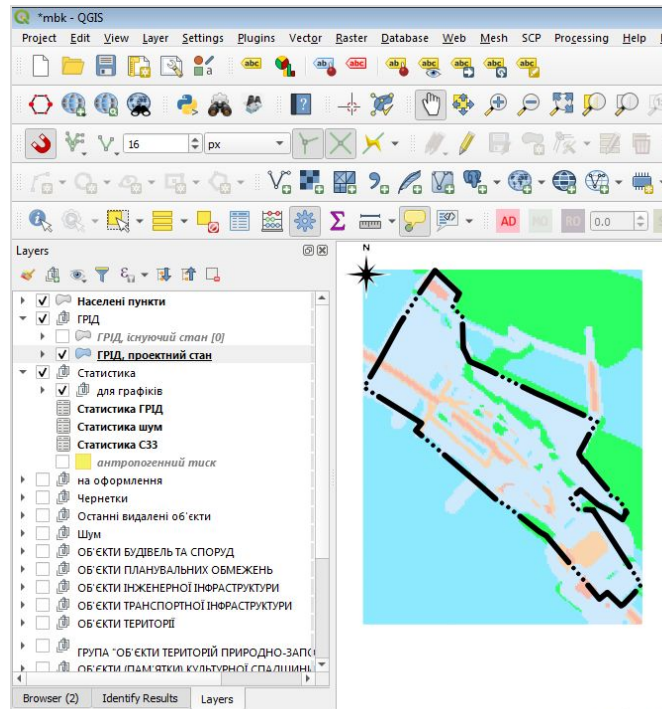


id	Назва
2	Почапи
I_Дуже погано,тер. %	0
П_Дуже погано,тер. %	0
I_погано,тер. %	0
П_погано,тер. %	0
I_задовільно,тер. %	14.68
П_задовільно,тер. %	0
I_добре,тер. %	78.24
П_добре,тер. %	0
I_дуже_добре,тер. %	7.08
П_дуже_добре,тер. %	0
I_Дуже погано,житл.буд. %	0
П_Дуже погано,житл.буд. %	0
I_погано,житл.буд. %	0
П_погано,житл.буд. %	0
I_задовільно,житл.буд. %	73
П_задовільно,житл.буд. %	0
I_добре,житл.буд. %	50
П_добре,житл.буд. %	0
I_дуже_добре,житл.буд. %	0
П_дуже_добре,житл.буд. %	0

Build a grid for the state of planned development by calling the “Integrated assessment for planned state” function.

Then call the “Grid statistics” function to compare planned and existing state data.





Статистика ГРІД :: Features Total: 1, Filtered: 1, Selected: 0

Expression

☐ Почапи

id	3
Назва	Почапи
I_Дуже погано,тер. %	0
П_Дуже погано,тер. %	0
I_погано,тер. %	0
П_погано,тер. %	0
I_задовільно,тер. %	14.68
П_задовільно,тер. %	12.11
I_добре,тер. %	78.24
П_добре,тер. %	80.49
I_дуже_добре,тер. %	7.08
П_дуже_добре,тер. %	7.39
I_Дуже погано,житл.буд. %	0
П_Дуже погано,житл.буд. %	0
I_погано,житл.буд. %	0
П_погано,житл.буд. %	0
I_задовільно,житл.буд. %	73
П_задовільно,житл.буд. %	60
I_добре,житл.буд. %	50
П_добре,житл.буд. %	60
I_дуже_добре,житл.буд. %	0
П_дуже_добре,житл.буд. %	1

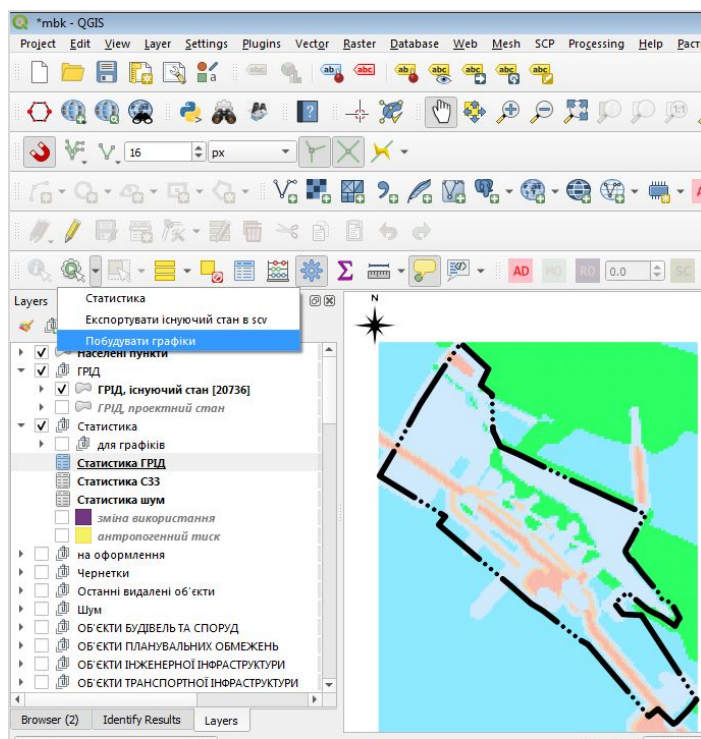
1 / 1

Show All Features



Similarly, you can build a grid for different planning alternatives and compare them.

For better perception of information, you can visualize statistical information as a chart, so call the “Chart” function.



The chart will be uploaded as an html document on your computer. Open it using any browser.

