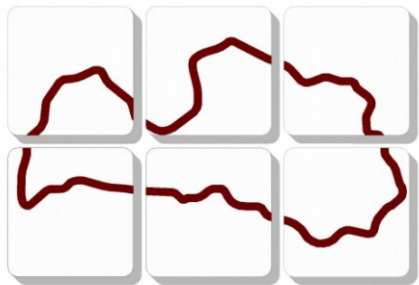


The usage of QuantumGIS in thematics and topographics mapping

Experience of the LGIA



LATVIJAS ĢEOTELPISKĀS
INFORMĀCIJAS AĢENTŪRA

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The IT strategy of LGIA

- In 2007 the software license of LGIA was audited and following the results the decision was taken that the missing of required licenses should be replaced by OS licenses;
- Defence industry of Communications and Information Systems Conceptual Plan (2011).

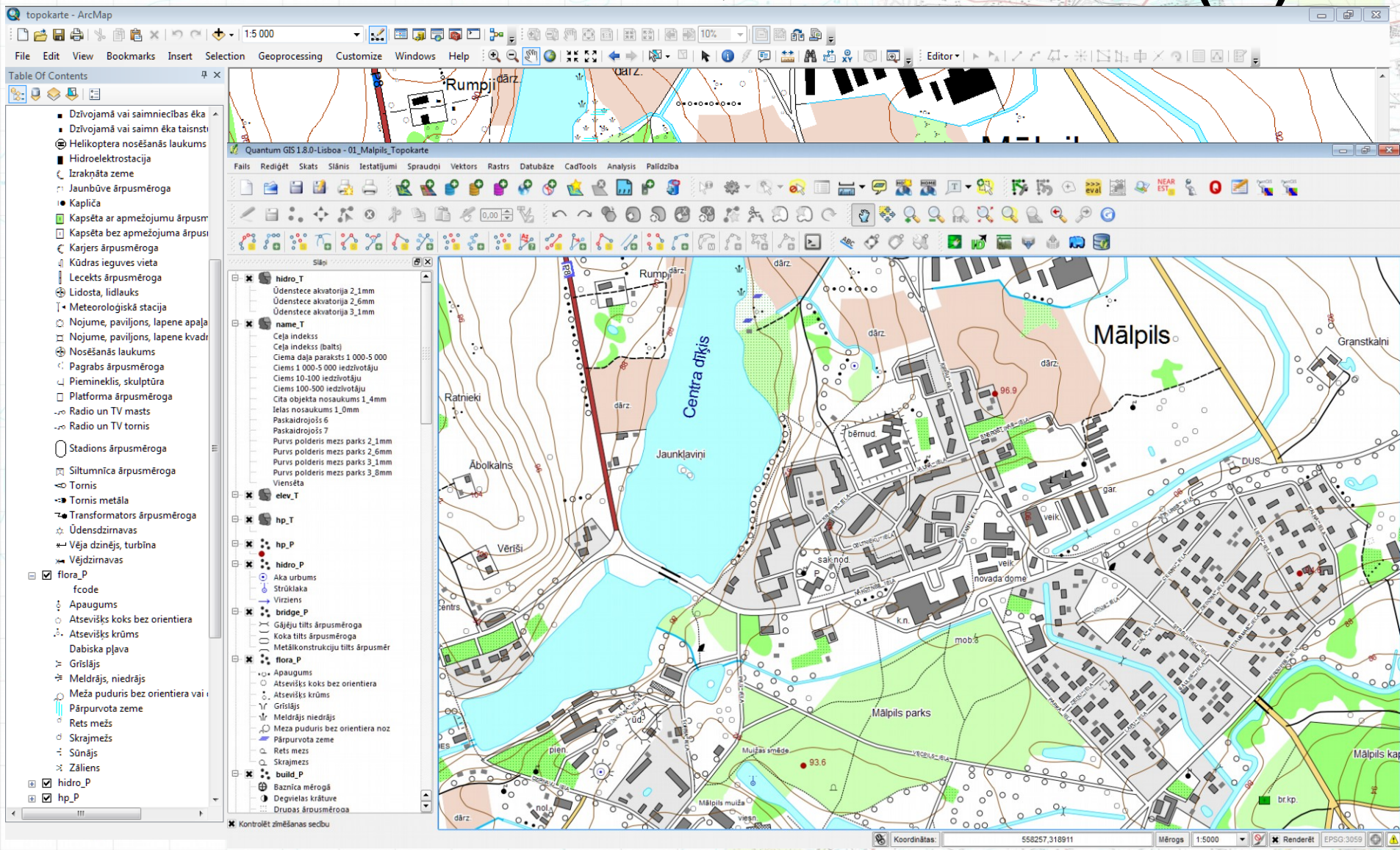
The current situation (1)

- Situation:
 - The number of employees in LGIA ~ 190;
 - The users of professional GIS, CAD and photogrammetry software ~ 2/3;
 - The number of licenced working places ~ 63%
 - Basic business licences:
 - ESRI ArcGIS – spatial databases, Web services;
 - Bentley MicroStation – large scale mapping, terrain models;
 - Photogrammetry and remote sensing software: Rakurs Photomode, Leica Geosystems LPS, ERAS Professional

The current situation (2)

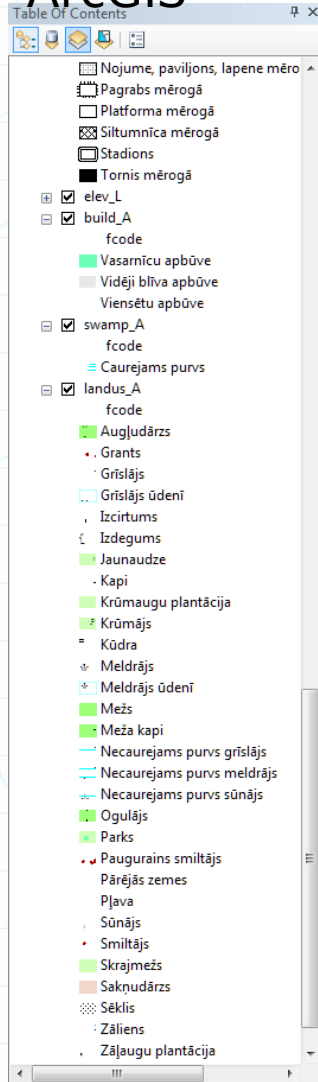
- Solution:
 - Usage of the network licenses;
 - Usage of the OS software in the workplaces, where the number of licenses is insufficient;
 - ArcGIS → QuantumGIS;
 - MSOffice → StarOffice;
 -

The topographics maps in scale 1:10000 and QuantumGIS (1)

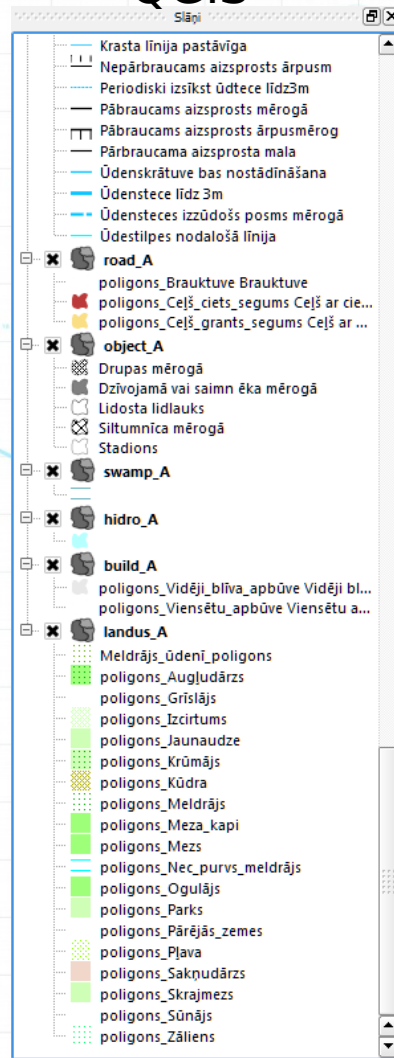


The topographics maps in scale 1:10000 and QuantumGIS(2)

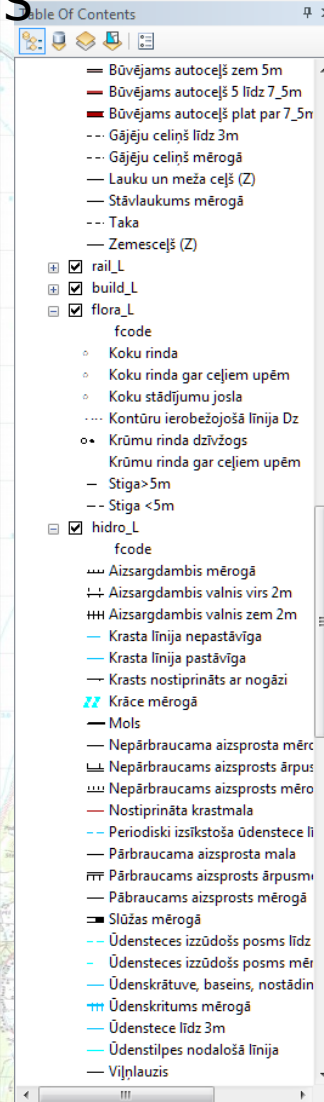
ArcGIS



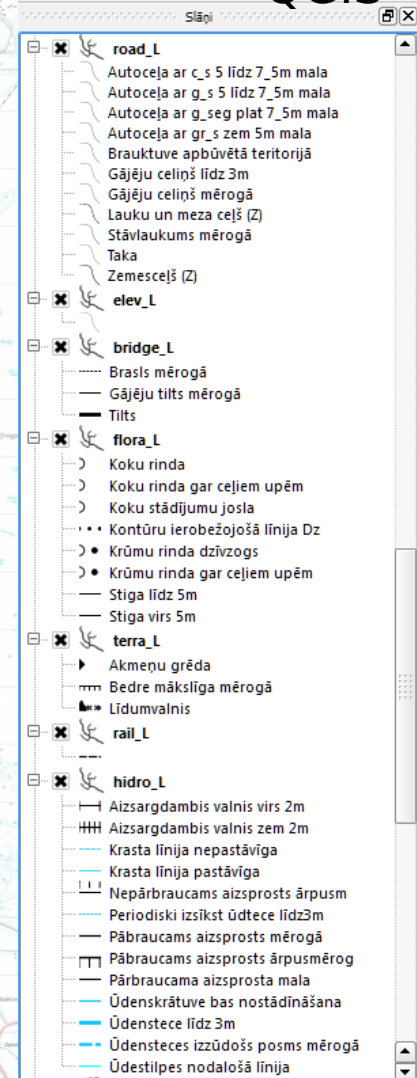
QGIS



ArcGIS



QGIS

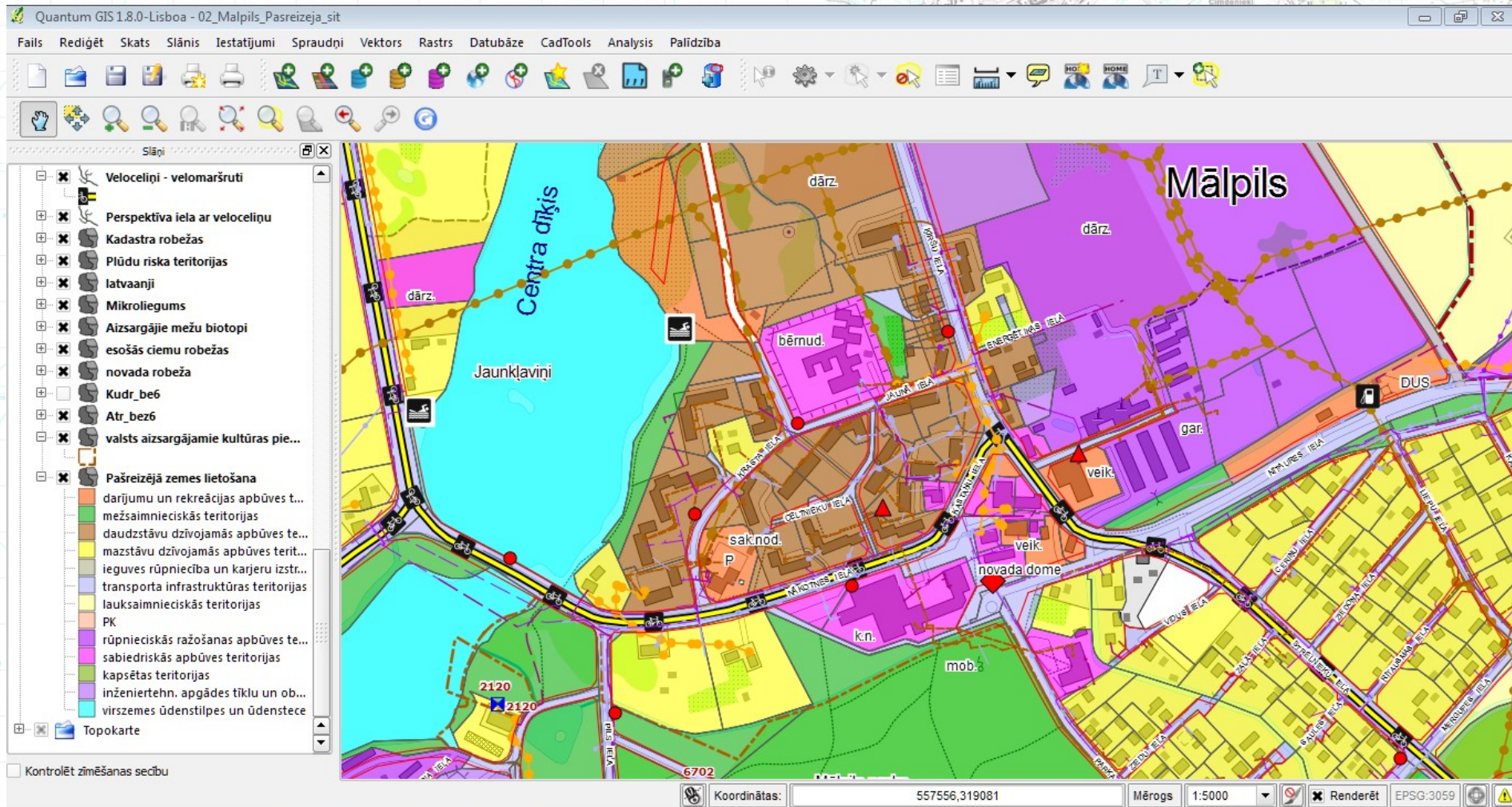


Thematics maps

- Pašvaldību teritoriju plānojuma attēlošana:
 - Pašvaldības teritorijas esošās situācijas attēlojums – 42 plānojuma tematiskie slāņi un 26 topogrāfiskās kartes slāņi;
 - Pašvaldības teritorijas plānotās - atļautās izmantošanas attēlojums: 28 aizsargjoslu tematiskie slāņi, 40 plānojuma tematiskie slāņi un 26 topogrāfiskās kartes slāņi;
- Kadastra kartes informācijas attēlošana;
- Dažādi karšu salikumi

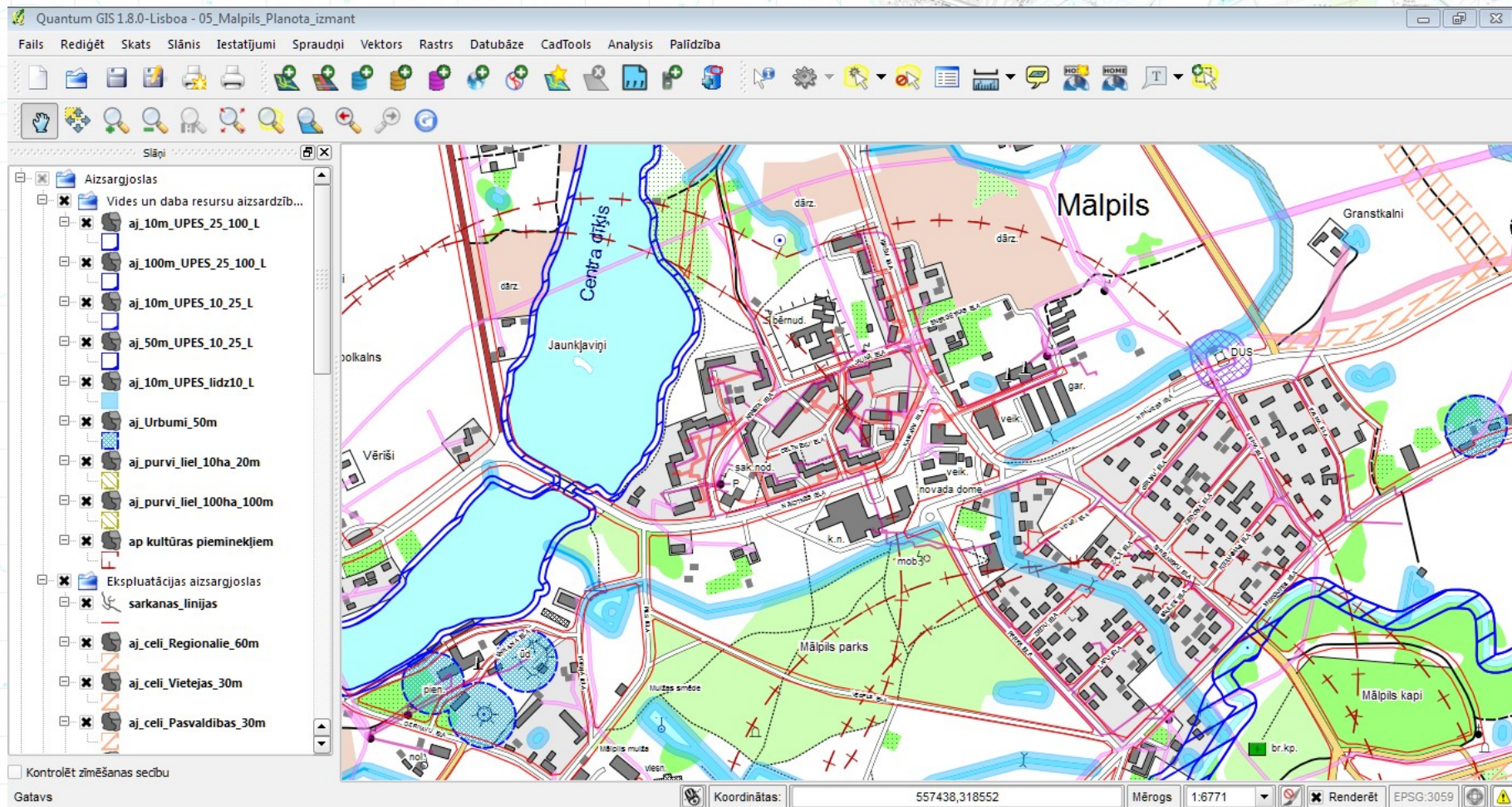
Local government territories planning map

Representation of the current situation of municipality



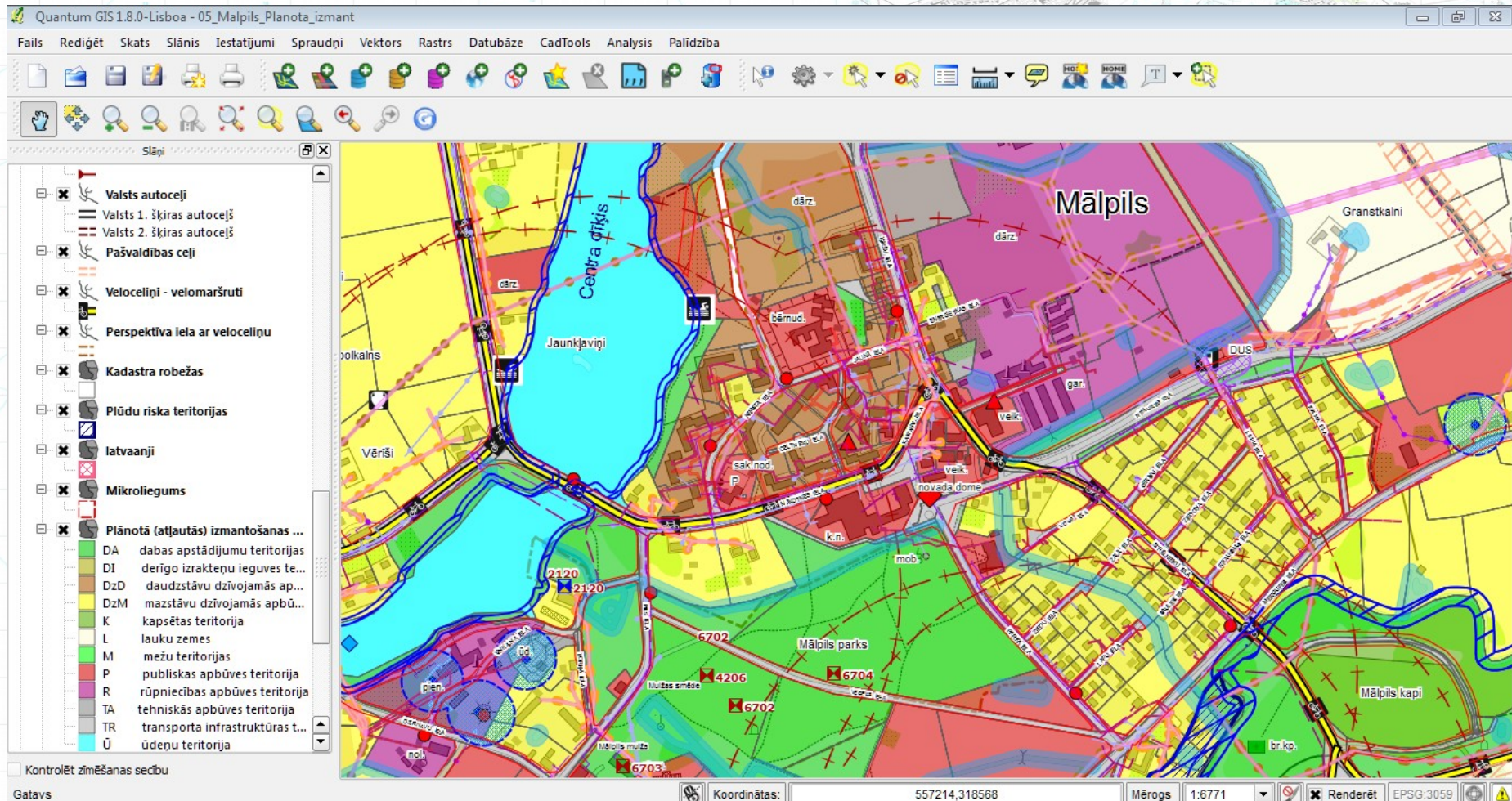
Local government territories planning map

Representation of planned – allowed usage of municipality area. Protective zones



Local government territories planning map

Representation of planned – allowed usage of municipality area. Full information



Display of the Cadastral map information (1)

- The raw data issued by State Land Service;

The screenshot displays a Windows desktop environment. In the foreground, five Excel files are visible, each with a green 'X' icon and a blue grid pattern. The files are named 'Malpils_no v_TP-1' through 'v_TP-5' and have file numbers 8074_001 to 8074_005. An Excel spreadsheet is open, showing a large table with 87 columns. The background of the desktop is a cadastral map of Liepāja, Latvia, showing streets, buildings, and green spaces. The Excel window title is 'Malpils_nov_TP-1.xls [Saderības režīms] - Microsoft Excel'. The ribbon includes tabs for 'Fails', 'Sākums', 'Ievietot', 'Lappuses izkārtojums', 'Formulas', 'Dati', 'Pārskatīšana', and 'Skats'. The 'Skats' tab is active, showing options for 'Parasts', 'Lappuses izkārtojums', 'Lappuses pārtraukumu ieskaits', 'Darbgrāmatas skati', 'Mērjosla', 'Formulu josla', 'Režģlīnijas', 'Virsraksti', 'Rādīt', 'Tālumaizmaiņa', '100%', 'Tālumaizmaiņt uz atlasi', 'Jauns logs', 'Sakārtot visus', 'Sasaldēt rūtis', 'Sadālit', 'Pasiēpt', 'Parādīt slēpto', 'Skatīt parādītus līdzās', 'Sinhronā ritināšana', 'Atiestatīt loga novietojumu', 'Saglabāt darbietu', 'Pārslēgt logus', and 'Makro'. The spreadsheet shows a table with 87 columns, with the first column labeled 'A5' and the first row labeled '1'. The table contains various data points, including land parcels and their characteristics.

The information containing 87 columns of the Excel table!

Display of the Cadastral map information (2)

- Merge of separate *.dgn files into one cadastral map for all territory of municipality;
- Converting of data to the ArcGIS geodatabase and processing of topology;
- Merge Cadastre Data in Excel tables into one file;
- File sharing into separate tables and deleting of unnecessary records;
- The table importing in Access ESRI personal database

Input ~ 5 working days for arrangement of cadastral data!

Display of the Cadastral map information (3)

The screenshot displays the ArcMap interface with the 'Identify' window open. The 'Identify from' dropdown is set to '<Top-most layer>'. The tree view shows the following hierarchy:

- ekas
 - 308,508434
 - Buves
 - Mālpils nov., Mālpils, Nākotnes iela 5
 - ZVieniba
 - Mālpils nov., Mālpils, Nākotnes iela 1
 - Liet_merki
 - 0.2711
 - 0.8935
 - 0.029
 - 0.0387
 - 0.0877
 - Ipasumi
 - Nav izvēlēts
 - Kadkarte
 - kopa
 - Zemes lietošanas mērkis

The 'Location' field is empty. The 'Field' and 'Value' table below shows the following data:

Field	Value
OBJECTID	1034
Kad_numurs	80740030329
Ipas_numurs	80740030329
Adrese	Mālpils nov., Mālpils, Nākotnes iela 1
Zemes_vien_statuss	nekustamais īpašums
Platiba	1.32ha
valdosais_LIZ_kva...	0
Jaunaudzes_plat	Nav
LIZ	Nav
Aramzeme	Nav
Auglu_darzs	Nav

The map on the right shows a cadastral map with brown buildings and red outlines. The status bar at the bottom indicates 'Identified 1 feature'.

Display of the Cadastral map

Quantum GIS 1.8.0-Lisboa - Kadastrs

Fails Rediģēt Skats Slānis Iestatījumi Spraudņi Vektors Rastrs Datubāze CadTools Analysis Palīdzība

Slāpī

- ZVienība
- Pusg_iest
- Īpasumi
- Buves
- ekas
- Kadkarte
- VZD dati

Identificēt rezultātus

Objekts	Vērtība
0	Kadkarte
igds_basename_1	kopa
(Atvasināta)	
(Darbības)	
Adrese	Mālpils nov, Kokles
Adrese	80740050451
Aramzeme	Nav
Aramzeme	Nav

QGIS is not suitable for analysis of complex relational databases!!!

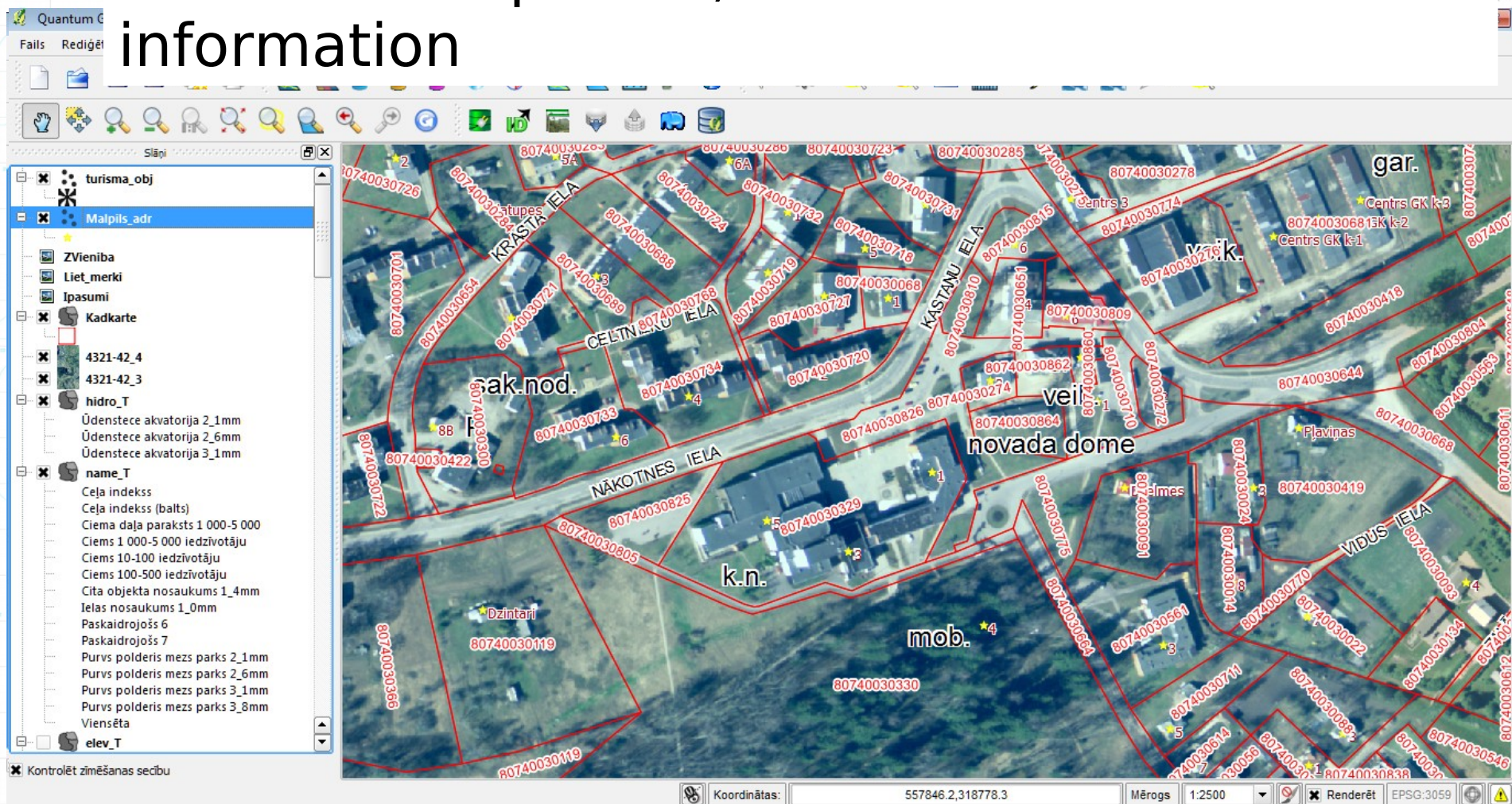
OBJECTID	2220
OBJECTID	365
OBJECTID	1491
Parejas_zemes	0.69
Platība	1.52ha
Platība	Mālpils nov, Kokles
Plava	Nav
Purvs	Nav
SHAPE_Area	15209.346068474
SHAPE_Area	15209.346068474
SHAPE_Length	699.360204041408
SHAPE_Length	699.360204041408
Udens_obj_zeme	0.2
Zem_celīem	Nav
Zeme_zem_udeniem	0.2
Zemes_vien_statuss	nekustamais īpašums

Kontrolēt zīmēšanas secību

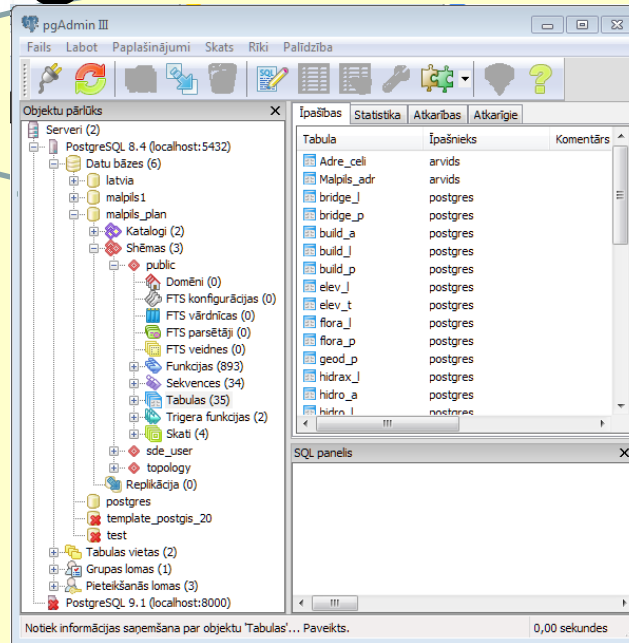
Koordinātas: 555828,312966 Mērogs 1:5000

Various combinations of map layers

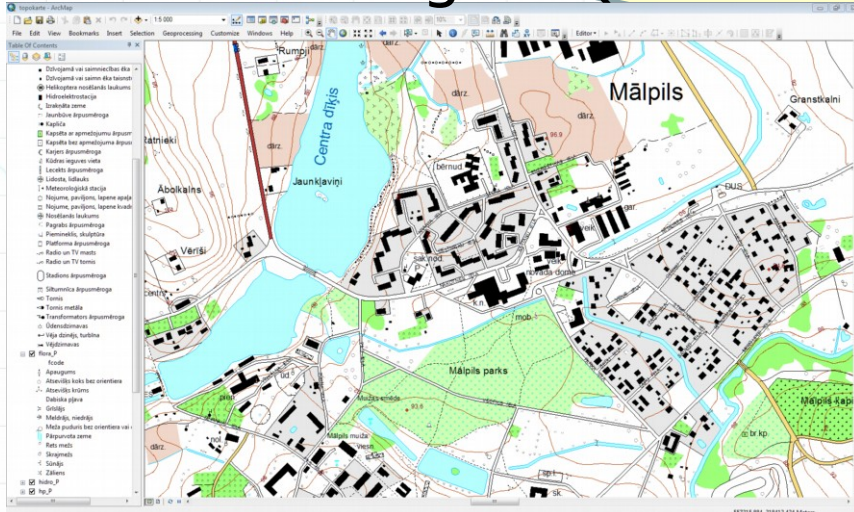
- With the ortophotos, Cadastral and address information



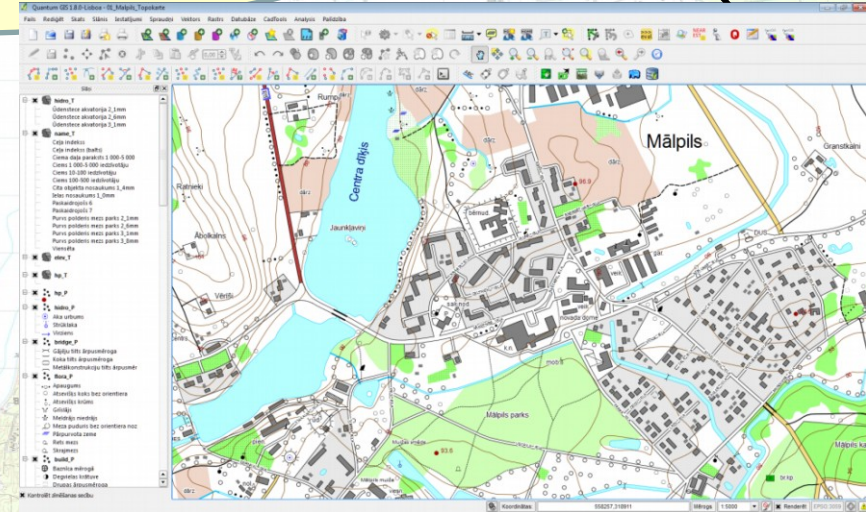
PostgreSQL/PostGIS



ArcGIS&PostgreSQL Client

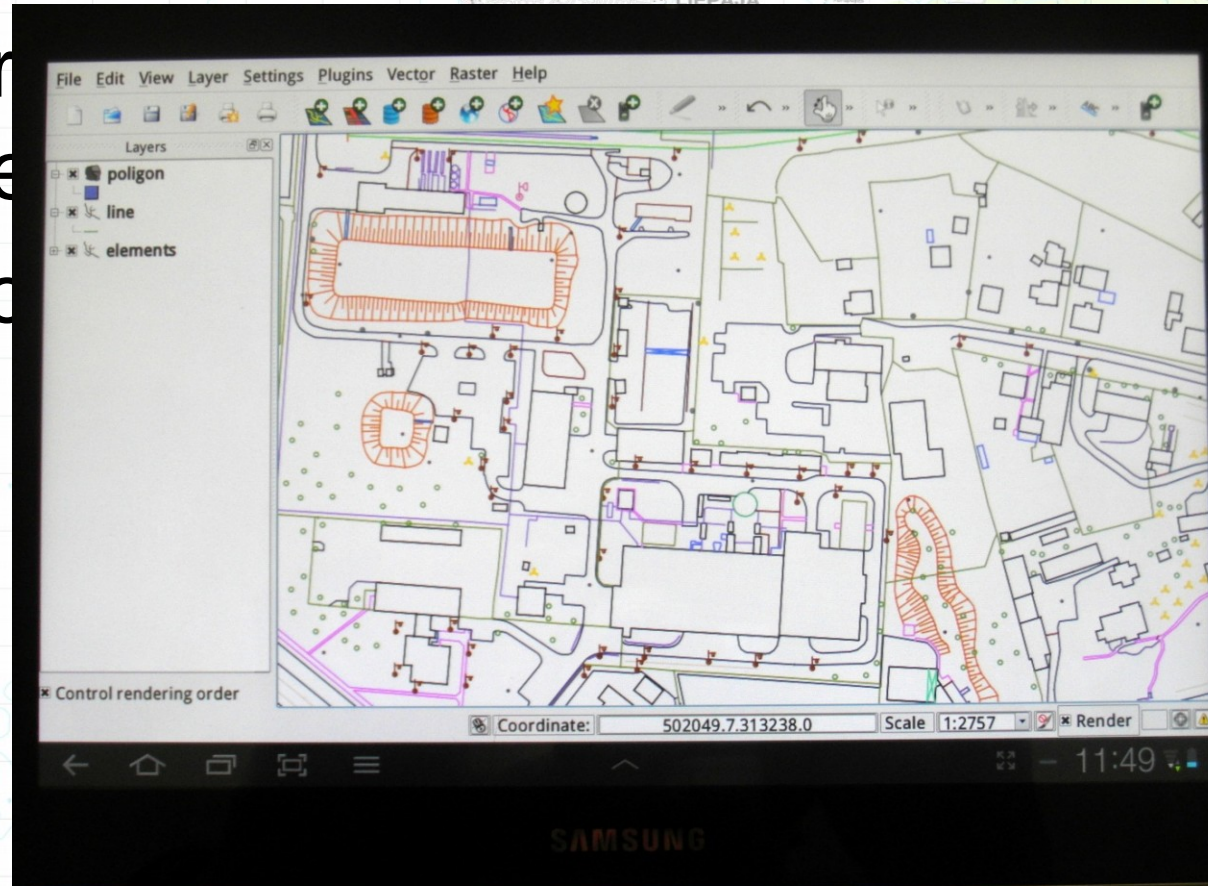


QGIS



QGIS for Android

- The GIS software is required for work with mobile devices;
- LGIA – ensure verification field
- One of the po



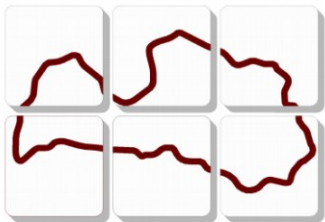
Summary (1)

- Problems:
 - The changing the main format from SHP to???
 - The latest versions of QGIS in SHP is not supported Windows 1257 or similar national fonts;
 - If changing versions to newer versions QGS file can get lost the layers fonts;
 - It is not possible to build complex GIS system based on the complex relationships between database tables;
 - QGIS for Android is for Tablet rather than mobile devices with small screens. It would be necessary to develop a version similar to ArcPad;
 - Finger, however, is too coarse and hard-positioned information input tool for tablet, thus suggesting a more efficient use in a field opportunities offered by the GIS;
 - In maps file is not possible to define a relative path to the source. After moving of directory file maps must arranged over a new.

Summary (2)

- Recommendations:
 - Taking into account limitations of QGIS, carefully plan the GIS system based on QGIS!
 - Before the implementation of QGIS think about how to solve the language problems, we recommend to take installation from <http://nextgis.ru/> and use UTF-8 font encoding system!
 - Do not create too large maps combinations, to large number of layers making QGIS slow;
 - All the ingenious is simple!

**The best OS GIS software is
QuantumGIS!!!
Thank you for your attention!**



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More information about LGIA in website www.lgia.gov.lv,
about products and services – <http://map.lgia.gov.lv>,

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