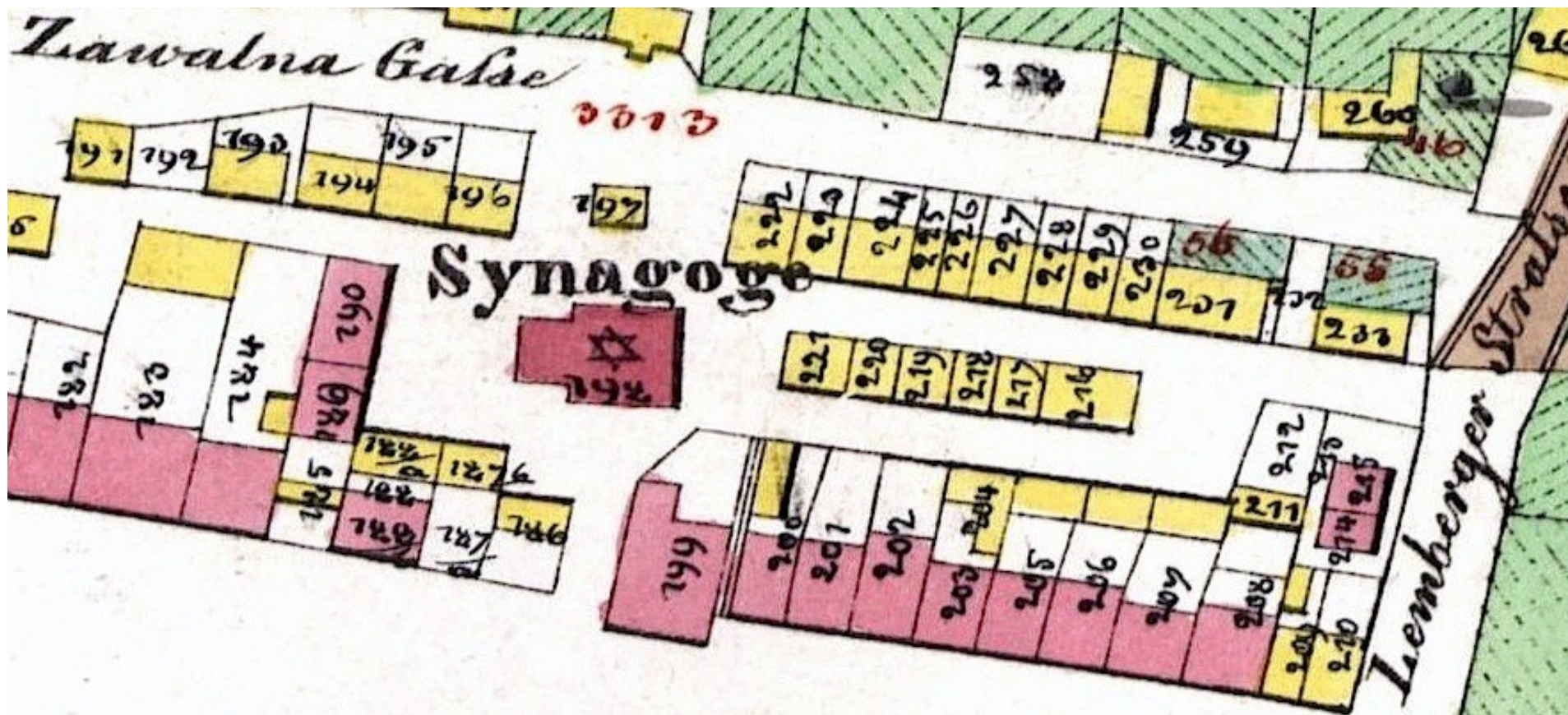


Gesher Galicia's Online Cadastral Map Room: Evolution and Opportunities

Jay Osborn ~ Gesher Galicia Map Room Coordinator



Gesher Galicia's Cadastral Map and Landowner Records Project

- Records Inventory

Archive Info Fond-Opys-Sprava	Place	Admin. District	Type	Year	Pages	Description
Ternopil Archives: 146-1-614	Grzymalow (Hrymaliv)	Husiatyn (Gusiatin) Ternopil oblast	Map	1828		1828-reambulated edition, lithographed in 1861
Ternopil Archives: 146-1-615	Grzymalow (Hrymaliv)	Husiatyn (Gusiatin) Ternopil oblast	Map	1875		
Lviv Archives: 17-1-131	Hrymaliv (Grzymalow)	Skalat	Text	1648	635-636	Coming of peasants from Vikno, Hrymaliv
Lviv Archives: 137-1-1	Hrymaliv (Grzymalow)	Skalat (povit Skalat)	Text	XVIII century	55	Notes about the history of Hrymaliv with a description of the emblem

- Database

Record Sources

× Surname: Kowalski
(and phonetic matches)

Record Types

Phonebook (2)
Property (8)
School (6)

Top Surnames

Kowalski (15)
Kowalska (1)

Top Given Names

Jozef (3)
Zofia (3)

+ Jan KOWALSKI

1879



Year: 1879

Town: Buczacz (now [Buchach, Ternopil's'ka oblast, Ukraine](#))

House Number: 0

District: Miasto

Property Area (in morgi): 1 morgi

1 morg in Galicia = 1.422 acres

Property Area (in sazni): 453 sazni

1600 sazni in Galicia = 1 morg

+ Franciszek KOWALSKI

1879



+ Grzegorz KOWALSKI

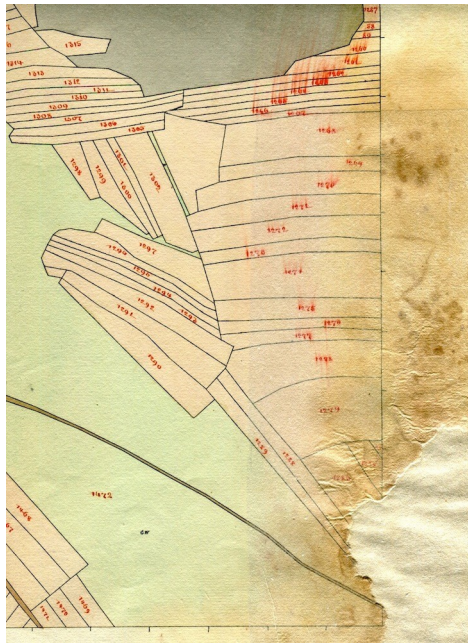
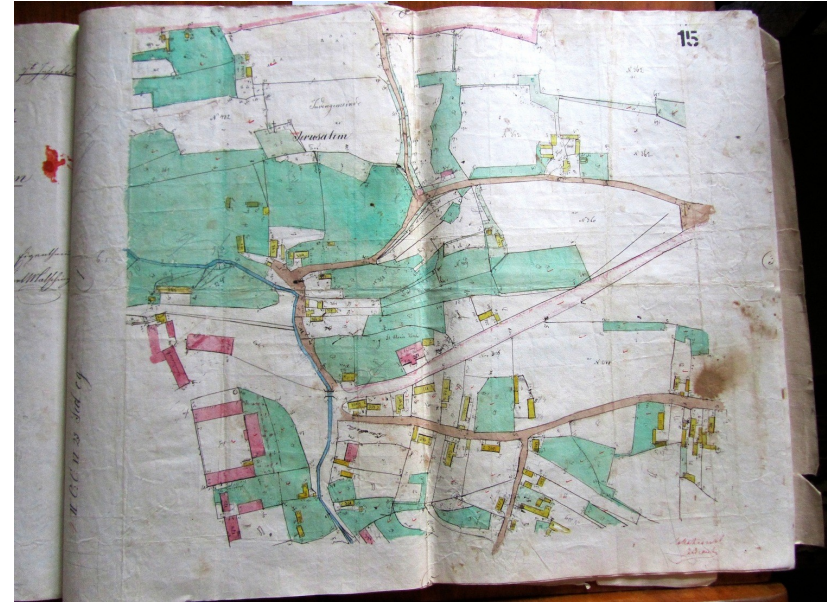
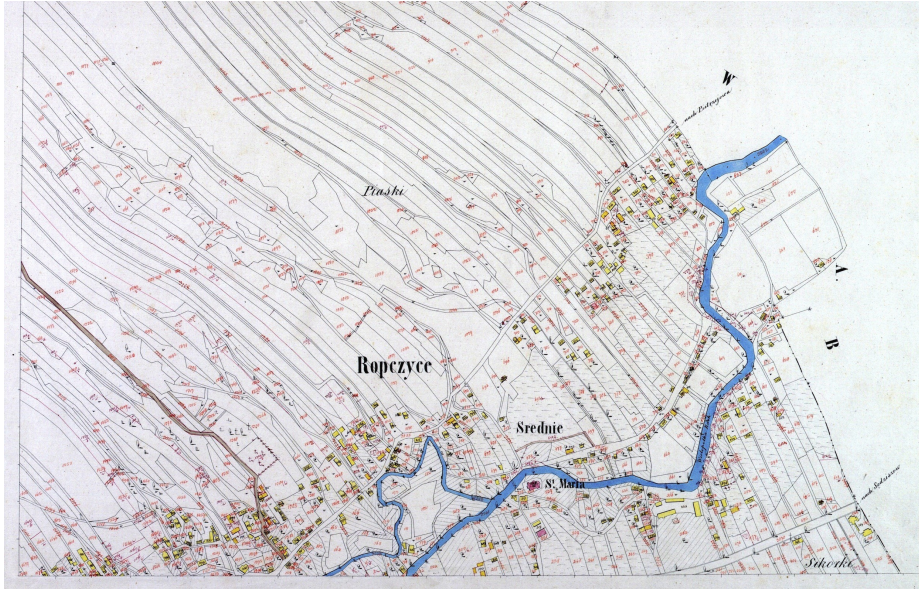
1879



- Cadastral Maps



Historical Paper Maps in the Archives



The Google Earth Experiment



- large application size & complexity
- large image file size and download time

Manual Stitching Process: Start



Manual Stitching Process: Trim



Manual Stitching Process: Align



Manual Stitching Process: Blend 1



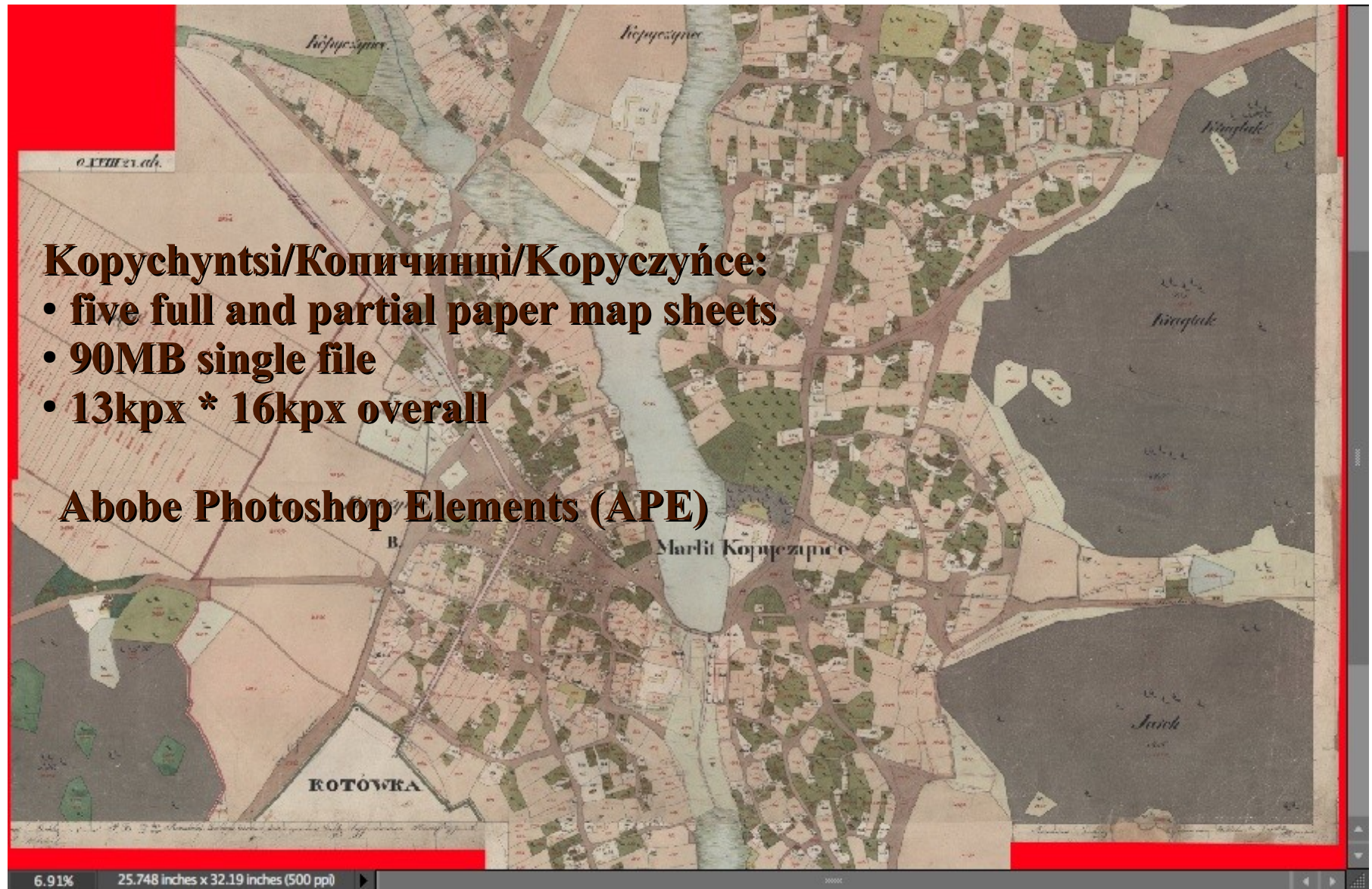
Manual Stitching Process: Blend 2



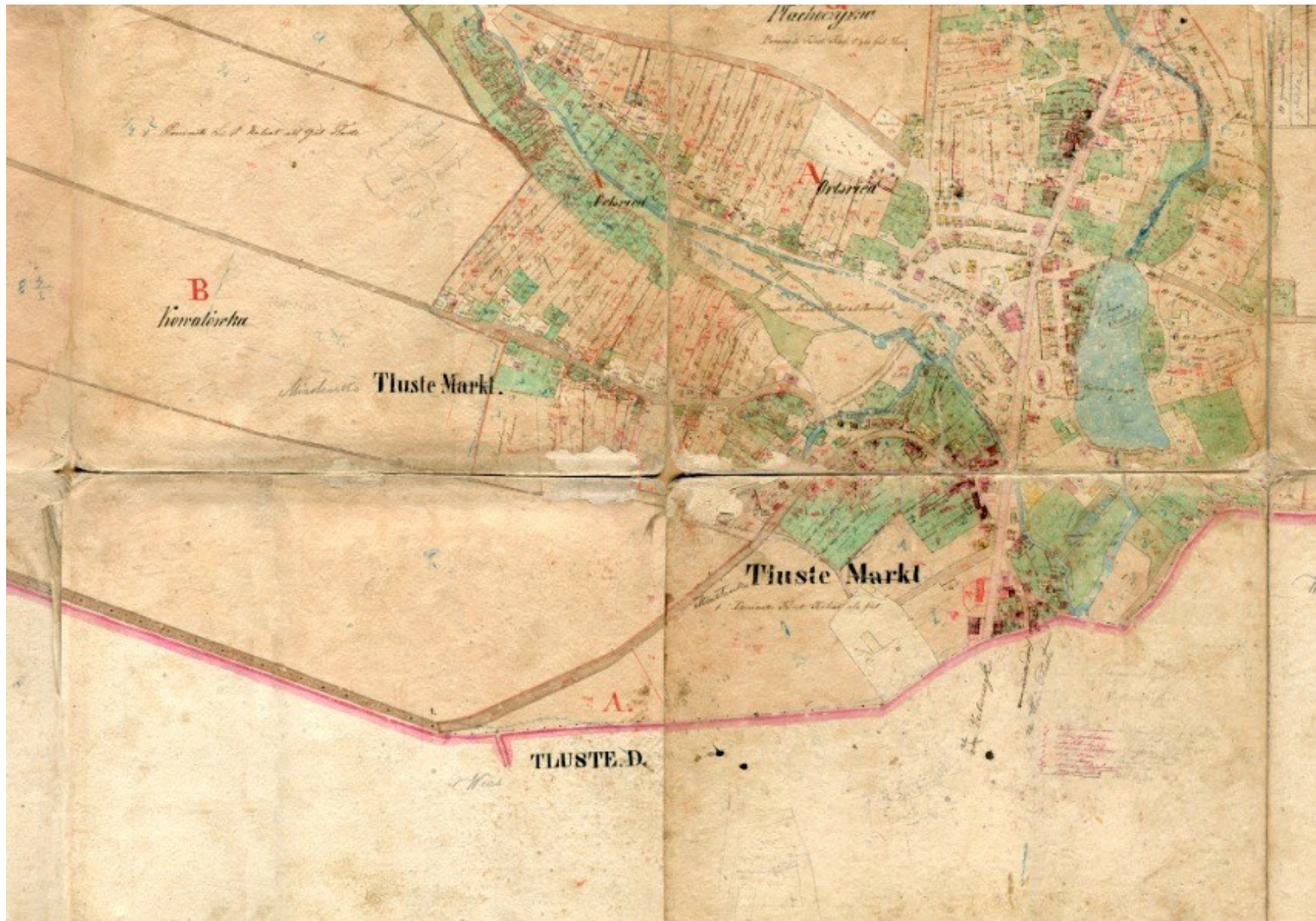
Manual Stitching Process: Detail



Manual Stitching Process: Entire Map



Panel-Cut & Folded Maps



Panel-Cut & Folded Maps

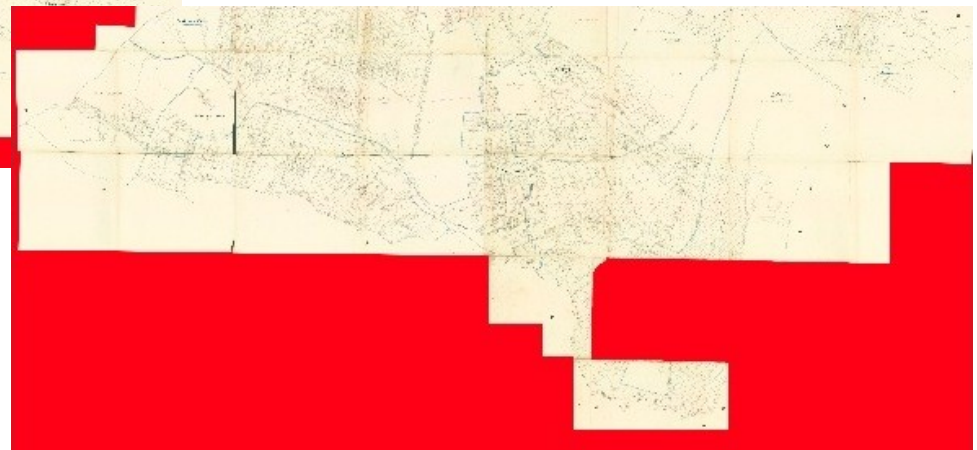


Pixel Limits in APE: GIMP Workaround

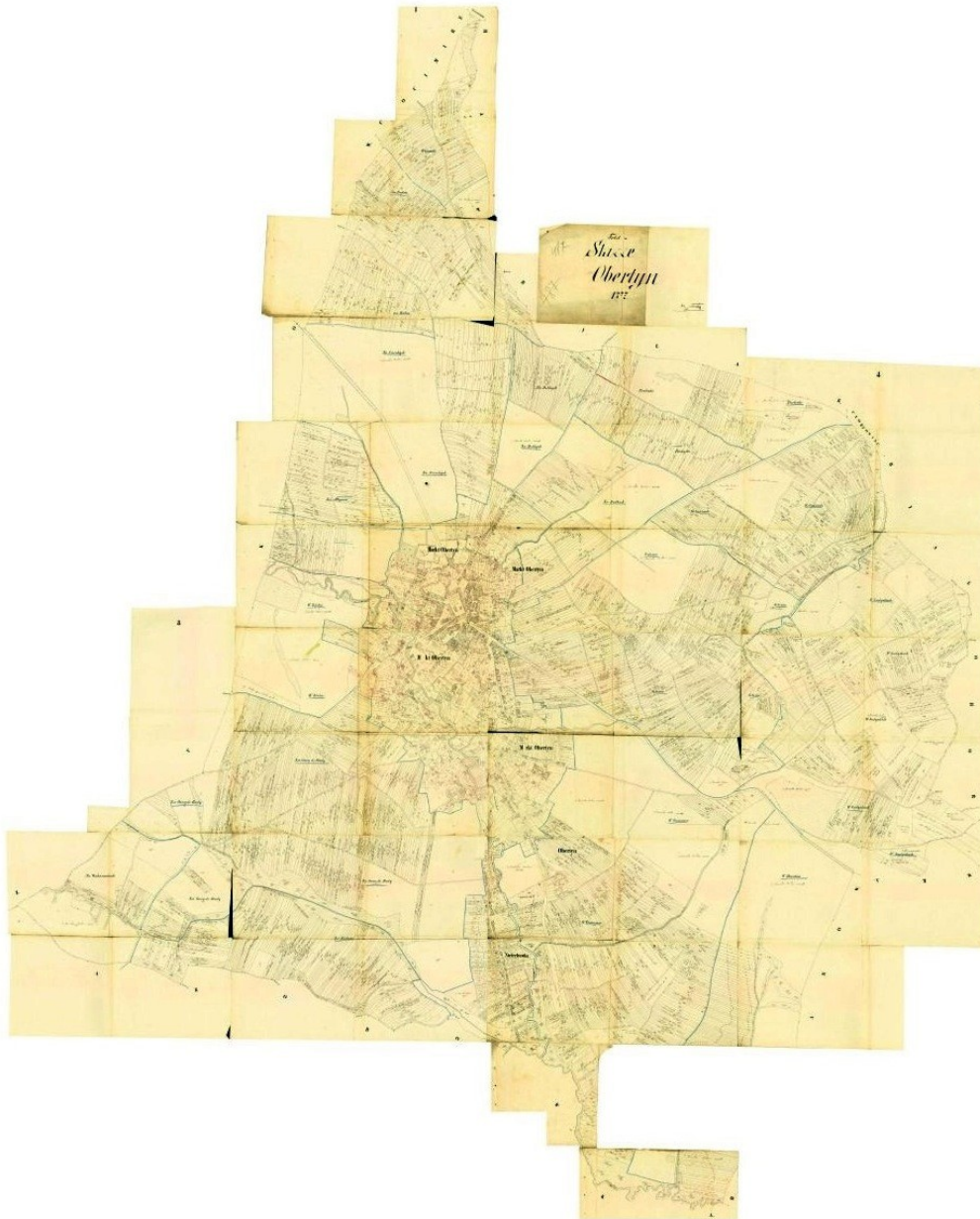


Obertyn/Обертин/Obertyn 1877:

- "north" section just under APE 30k pixel limit
- "south" section stitched separately



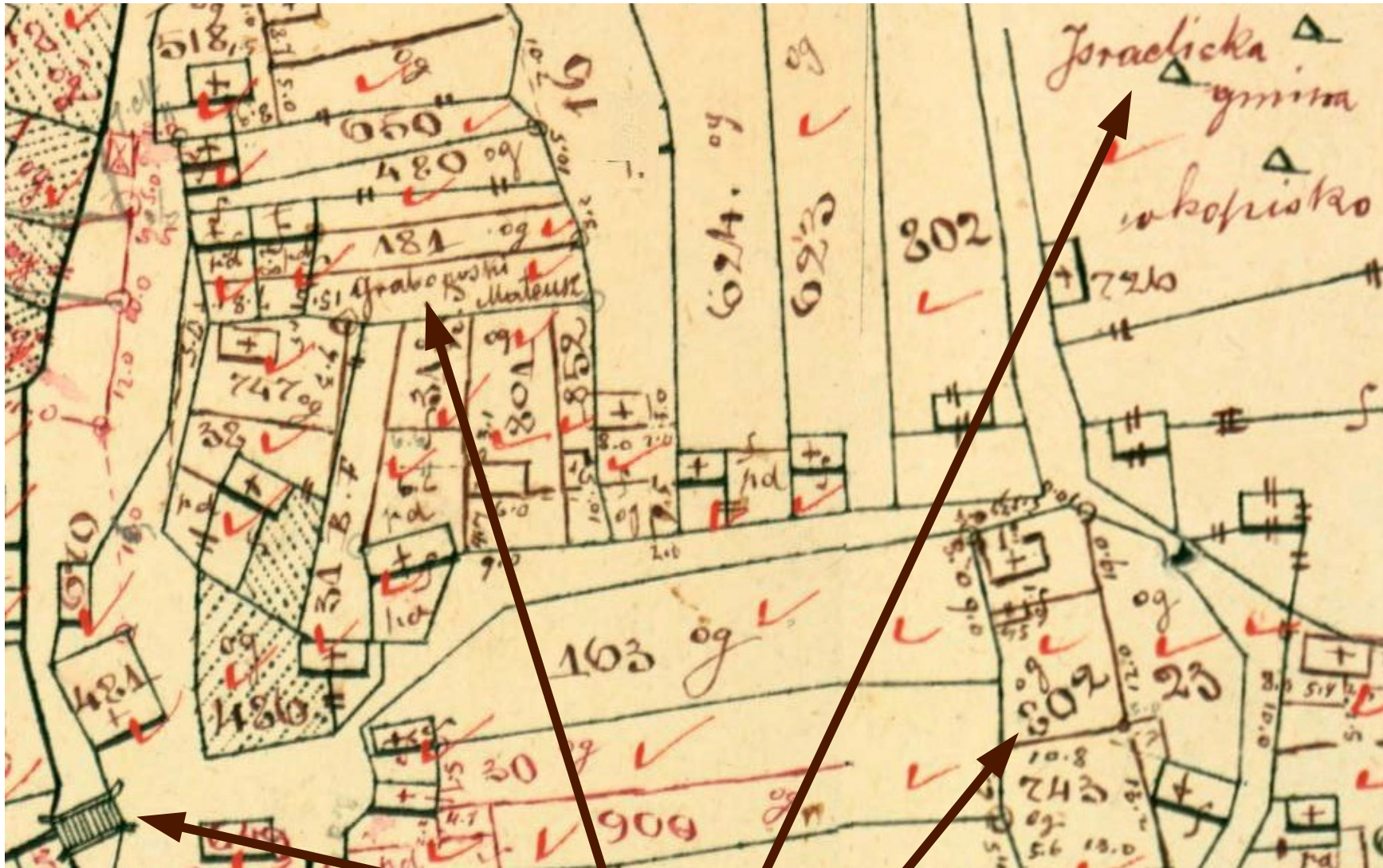
Pixel Limits in APE: GIMP Workaround



Obertyn/Обертин/Obertin 1877:

- 25 paper sheets; archive copy had been quarter-cut, and one quarter lost
- assembled single image over 1Gpx (29.5kpx * 37.0kpx)
- assembled single image 510MB

Pixel Limits in APE: GIMP Workaround

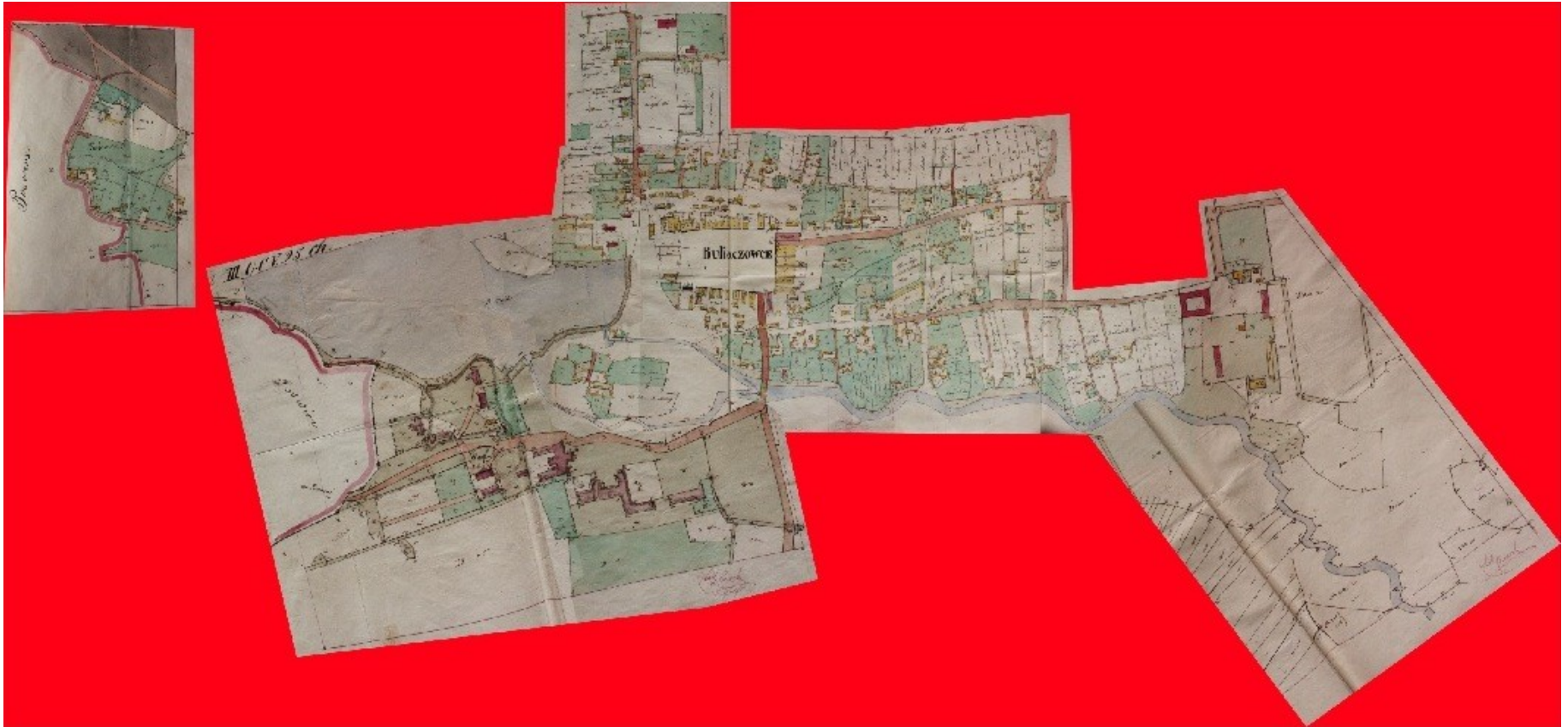


Details retained

The Problem of Feldskizzen



The Problem of Feldskizzen



- original sketches drawn to no scale or orientation within and between sheets
- assembly requires significant distortion just to fit features
- not all sketched features match any currently-existing buildings or landscape

Tiling and the Browser Viewer



49.jpg



50.jpg



51.jpg



52.jpg



53.jpg



54.jpg



55.jpg



56.jpg



57.jpg



58.jpg



59.jpg



60.jpg



61.jpg



62.jpg



63.jpg



64.jpg



65.jpg



66.jpg



67.jpg



68.jpg



69.jpg



70.jpg



71.jpg



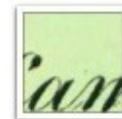
72.jpg



73.jpg



74.jpg



75.jpg



76.jpg



77.jpg



78.jpg



79.jpg



80.jpg



81.jpg



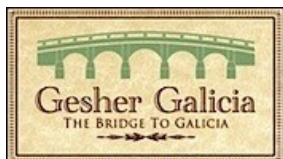
82.jpg



83.jpg

tiling by MapTiler, based on GDAL (OSGeo)

Tiling and the Browser Viewer



Bukachivtsi Center Feldskizze 1848

Partial feldskizze (field sketch) of the center of Bukachivtsi (Букачівці, Bukaczowce), from 1848. This initial survey sketch of the town is without scale, and the relative position of town features is only roughly approximate. However, this sketch shows house and numbers with some names, the central market square, a dam and reservoir, a church and monastery, plus Jewish property and a cemetery. Central State Historical Archives of Ukraine (Lviv) record 186.1.6238. Images sourced by Brian Lenius; all available map sheets with numbered buildings were acquired. Map sheets stitched by Jay Osborn at visible seams or speculatively based on 1855 & 1880 regional maps.

© 2013 Geshher Galicia, Inc. For more information, visit the Geshher Galicia Map Room.



viewer code by Geshher Galicia, based on MapTiler & OpenLayers (OSGeo)

Gesher Galicia Map Room Website: Cadastral Maps



Kalush Town Center Feldskizzen, undated

Cadastral feldskizzen map of the town center of Kalush (Калыш, Kalusz), administrative district of Kalush, region of Ivano-Frankivsk, undated. The six map sheets copied cover the entire residential area and all houses; also included are the residential districts of New Kalush (Neu Kalusz), Bania (Баня), and Zahiryia (Зарип'я, Zagorze). A Jewish cemetery and associated Jewish community lands are located to the northwest of the town center. A revised cadastral map showing house numbers, and many of the field parcels have householder names. Photocopy images of the folded black & white map.



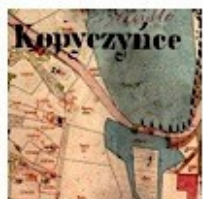
Komarno Town Cadastral Map, 1853

A complete lithographed cadastral map of Komarno, now in the Horodok Raion of L'viv Oblast, dated 1853. This full-color and detailed cadastral map incorporates the entire residential portions of town with surrounding farm sections and suburban villages. The map shows house numbers and parcel numbers for both residential and agricultural lands. Included in the map are a developed market square, a large central synagogue, two churches, a cemetery, orchards, and one of the most interesting networks of canals and waterways in the Gesher Galicia map collection.



Kopyczyńce Center Cadastral Map 1828

Near-complete cadastral map of Kopyczyńce (Kopychyntsi), administrative district of Czortków, region of Ternopil, edition of 1828. A very clear early colored cadastral map, incorporating all of the residential portions of town, and showing parcel numbers for both residential and agricultural lands. This copy includes inked-line updates, probably for a later cadastral map such as the ca. 1859 edition. Property numbers on this map correspond to names and numbers in the land register of 1828; note that property numbers change between this edition and the 1859 edition.



Kopyczyńce Center Cadastral Map, undated (ca. 1859)

A partial cadastral map of Kopyczyńce (Kopychyntsi), administrative district of Czortków, region of Ternopil, undated record corresponding to the land register edition of 1859. A partially-colored cadastral map incorporating most of the residential portions of town, and showing parcel numbers for both residential and agricultural lands. Included in this copy are inked updates showing new property divisions and other changes. Property numbers on this map correspond to names and numbers in the land register of 1859; note that property numbers change between the 1828 edition and this edition.



Korolowka Town Cadastral Map 1826 (Market & South Fields)

Incomplete indikationsskizzen of the market and south fields of Korolowka (Korolivka), administrative district of Borszczow (Borshchiv), region of Ternopil, from 1826. An intermediate sketch map showing house numbers as well as ground parcel & building parcel numbers; owners' names are written on larger parcels.

Gesher Galicia Map Room Website: Regional Maps



Tobias Conrad Lotter Map of Galicia and Lodomeria, ca. 1775

Engraved and hand-colored "New Map of the Kingdom of Galicia and Lodomeria, with the Duchy of Bukovina," showing towns (distinguished in four classes from fortified to ordinary to village to hamlet), postal routes, and major geographic landmarks. Annotated in French (and some Latin), and scaled in miles and toise d'ordonnance. Undated map produced by [Tobias Conrad Lotter and Sons](#) of Augsburg, Bavaria between 1772–1810, probably during Lotter's lifetime (by 1775). Single image, sourced by Pamela Weisberger, from the [New York Public Library](#).



William Faden Map of the Third Partition of Poland 1799

Historic map of the [Third Partition of Poland](#) by the British publisher William Faden, published in 1799. The very detailed map shows the 'dismemberment' of the former Polish-Lithuanian Commonwealth (bordered in pink) into Russian (beige), Prussian (yellow), and Austrian (green) partitions; Austrian Galicia is included in the green partition. The map also shows key land and water features, includes notes about the first partition, and an estimate of populations in the divided regions. Single image, sourced by Richard Cooper.



Marco Berra Map of Galicia, undated (ca. 1840)

Historic map of Galicia, with the Free City of Kraków, showing towns, roads, and color-highlighted boundaries of the Galician kreise. Published by Pietro Marco Giulio Berra from an unknown source and engraver, in Prague. Berra was primarily a [music publisher](#), active in Prague between 1811 and 1853; this map is estimated around 1840, when other maps in this style were produced. Stitched images of a map purchased and scanned for Gesher Galicia by Pamela Weisberger, sourced from an antiquarian bookstore in the Josefov distric of Prague.



Stanisław Majerski Map of Galicia and Lodomeria, ca. 1910

Historic map of the Kingdom of Galicia and Lodomeria, with the Grand Duchy of Krakow and the Duchies of Auschwitz and Zator, showing towns, elevation, and major geographic landmarks. Produced by Stanisław Majerski between 1908–1911, in Lwów. Single image, sourced by Logan Kleinwaks, from the [Krosnienska Digital Library](#); original cloth-backed map from the collection of Haliny Stępień.



Galicia Composite Voivodeship Administrative Map 1938

Modern composite administrative map of the historical region of Galicia, comprising the voivodeships of Kraków, Lwów, Stanisławów, and Tarnopol. Administrative districts highlighted in a four-color scheme. Assembled for Gesher Galicia by TarichaRivularis and licensed under [CC-BY-SA](#).

Web Tool Expansion: Experiments and Plans

Projects in Progress:

- Georeferencing Historical Maps
- Map Layering
- Interactive Map Searching
- Linking to our Database

Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



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Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



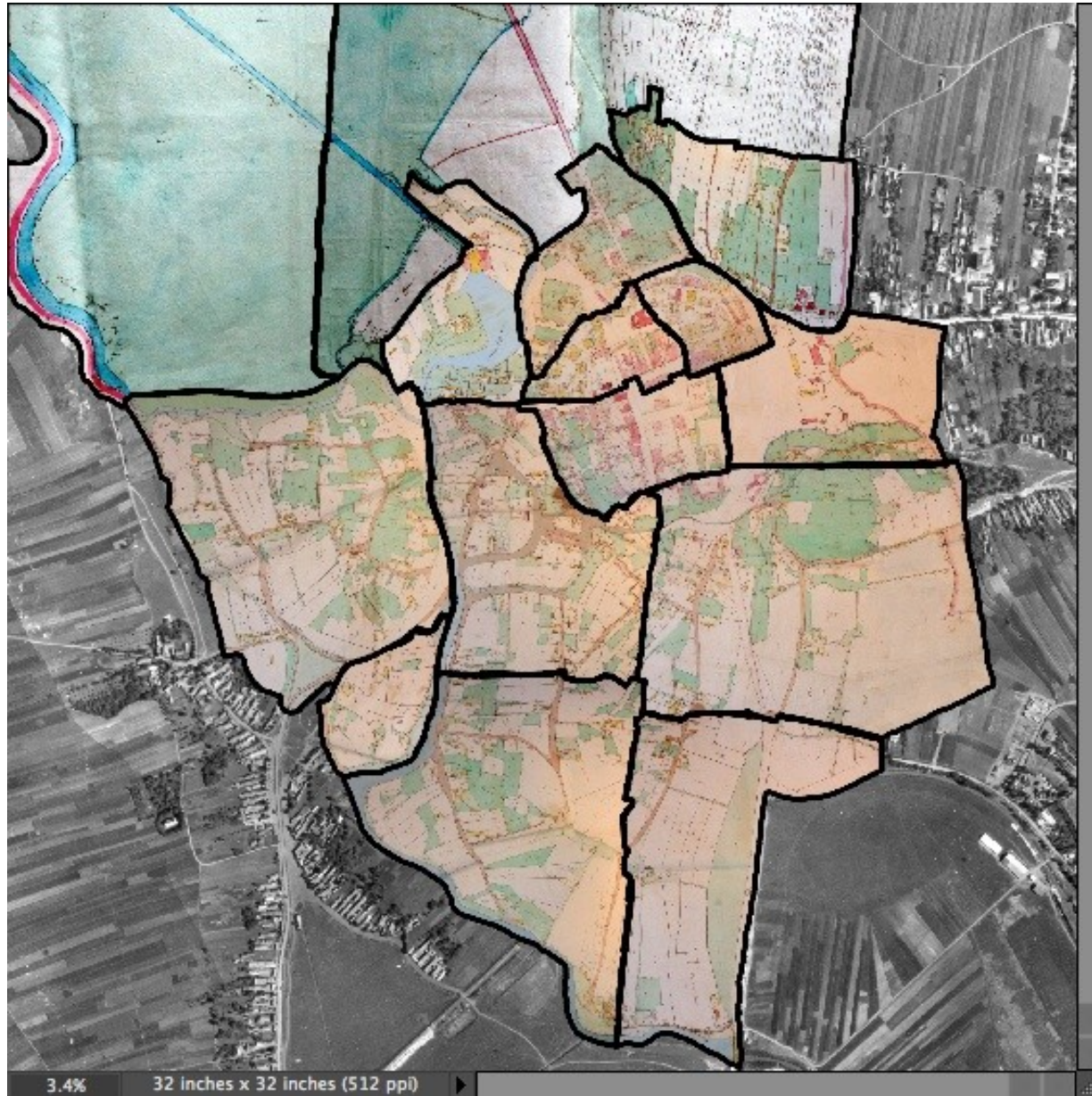
Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Georeferencing Example: Feldskizzen Rubbersheet



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



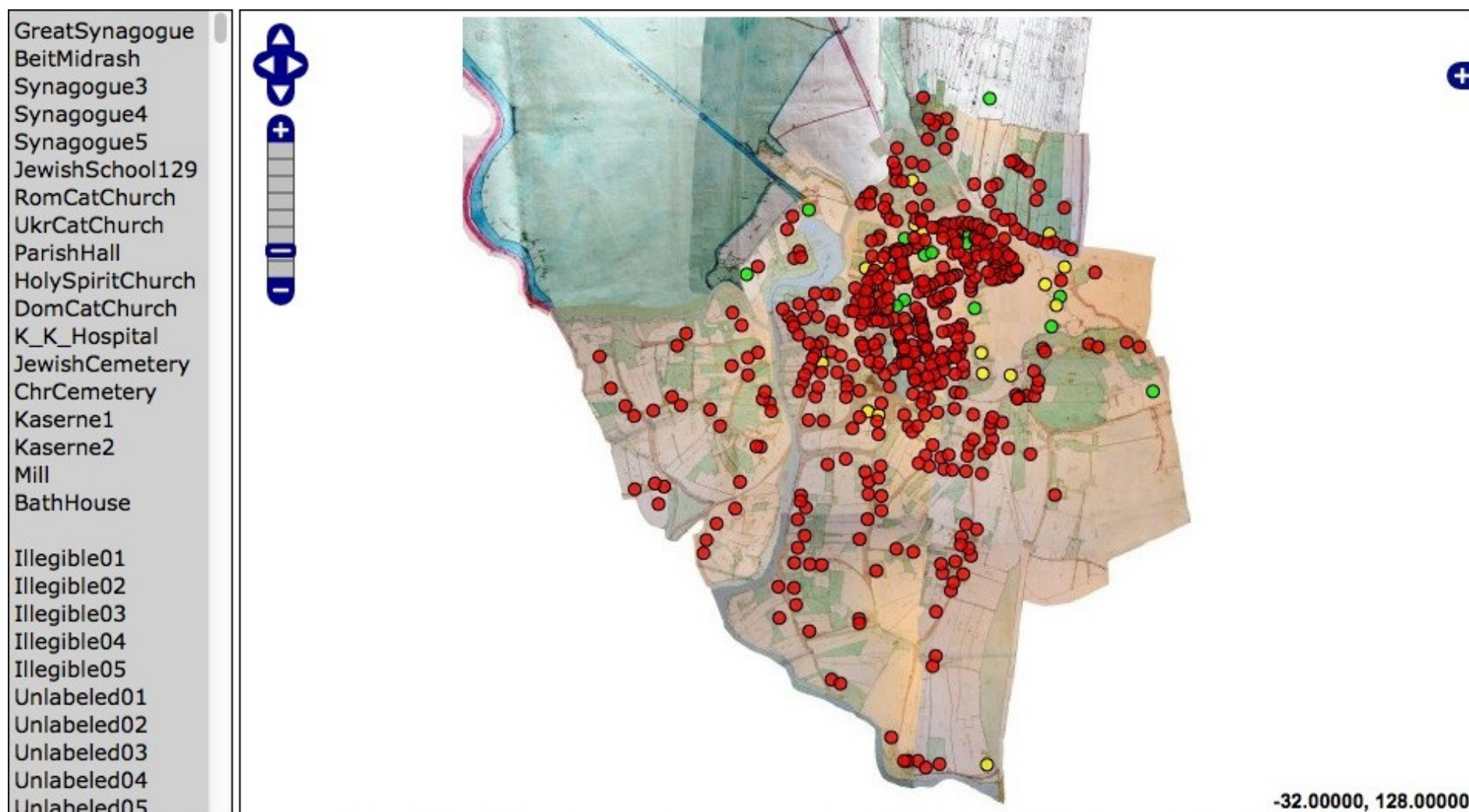
Layering Example: Historical Map on Modern



Layering Example: Historical Map on Modern



Interactive Map Search Example: Building Numbers



historical building numbers tagged on map and categorized in left column

Interactive Map Search Example: Building Numbers



dot tags on apparently significant buildings, with or without numbers

Interactive Map Search Example: Building Numbers



clicking the column entry zooms and centers map

Interactive Map Search Example: Building Numbers



hard-to-find buildings are easily accessible

Links Between Graphical Maps and Text/Numeric Data



tooltips and external links to records/database

Looking Forward: Advancing & Accelerating

Gesher Galicia looks forward to bridging to state and private archives, land survey offices, etc., to share data and to learn and develop methods for:

- digitizing historical paper maps: image capture settings, raster data and metadata formats
- rubbersheeting and assembly of digitized map pieces
- georeferencing historical maps
- historical map interpretation: manual/automatic extraction of shapes and features
- map data exchange
- database structure for historical property owner / tax roll information
- integrating records databases with online maps
- Internet publication of maps