





Figure 1. Example map from the set - hand-colored map of the town of Dolní Nýrsko from 1727 with a floor plan of the Church of the Fourteen St. Helpers. Scale 1:1294. National Archives of Prague, Collection of Maps and Charts, inv. no. 1174, sign. A/XII/16.

## 2.1 Data Collection

The maps had been stored at the registry of Old Czech Administration at first but later were moved to the Collection of the Old Administration thanks to the efforts of archivists Jan Josef Klauzer and Kajetan Nadherný. Later still they were transferred to the Czech Archives, the Archives of the Ministry of the Interior, and later to the State's Central Archives and finally since 2002 they have been stored at the National Archives (the successor organization of the Archives of the Ministry of the Interior) (Steinova et al. 2019).

Data from the catalogs of the National Archives formed the basis of a database of information about the maps. These data were further expanded by additional information by authors of (Steinova et al. 2019) - settlements typology, processing techniques, colouring, witness' names, seals and, most notably with relation with application discussed in this paper, coordinates of selected buildings and map scales.

Identification of buildings and features was done with the help of the Index Sketches of the Stable Cadastre and current aerial photography. Using these resources many current locations of buildings depicted on the maps can be identified. Still, some sites have changed significantly or completely disappeared. In these cases the maps are the only evidence of settlements in 18<sup>th</sup> century in given areas.

## 3. Publishing the maps online

Publishing maps online is in general a multistep process. The steps are:

- scanning
- preparation for publication
  - crop scans
  - georeference
  - transformation into appropriate format (tiles, zoomify, etc.)
- the actual publication - creation of web presentation or application

### 3.1 Scanning

First step to publishing maps online is to scan them. During this process the specifics of the work should be observed - the maps should be scanned with sufficient resolution and ideally on a precise scanner (Antoš et al., 2012) to preserve cartographic qualities of the original maps.

### 3.2 Preparation

The raw scans have to be prepared for publication with the exact steps varying based on method of publication. In general the scans have to be at least cropped to just the map sheet and transformed into a format suitable for publication on the internet i.e. a map layer served by an image server of choice.

Ideally this step would include georeferencing (i.e. associating maps with spatial location). However in our case not all of these maps can be georeferenced. Even ignoring the low cartographic quality of some of the maps in some cases the situation changed so much no suitable identical points can be found. Still all maps can be at least associated with specific town or village.

Based on the number of maps and their character the process of georeferencing can be very time consuming. It's necessary to collect a fair number of identical points and more importantly to have some cartographic and technical expertise to carry out the georeference. While there are tools available to help with this task they generally cannot produce results tailored to exact needs of a custom map application or online presentation.

It should be noted that georeferencing is not strictly required to publish maps online and even without it the maps can be displayed. However georeferencing greatly increases the usefulness of digital maps by allowing combining them with other map sources available via various standard protocols (WMS - Web Map Service, TMS - Tile Map Service, etc.).

### 3.3 Application

The last step is developing an online presentation. That can vary a lot in terms of provided features from simple presentation to full featured GIS (Geographic Information System). The application described in this paper falls somewhere in the middle. The goal was to not only put the scans of maps on display but also:

1. Provide supplemental interesting data.
2. Show the maps in context of other maps both contemporary and current when possible.

The supplemental data and map metadata were collected by researchers from the National Archives by exploring the maps and referencing archival documents.

To fulfil the second objective the application uses map sources created under other VÚGTK's grants (especially *NAKI – Cartographic Sources as Cultural Heritage*) and sources available from other providers (like ČÚZK, Bing Maps from Microsoft and OpenStreetMap).

The application presents an overview map of the Czech Republic with locations of the Jewish plans marked by

