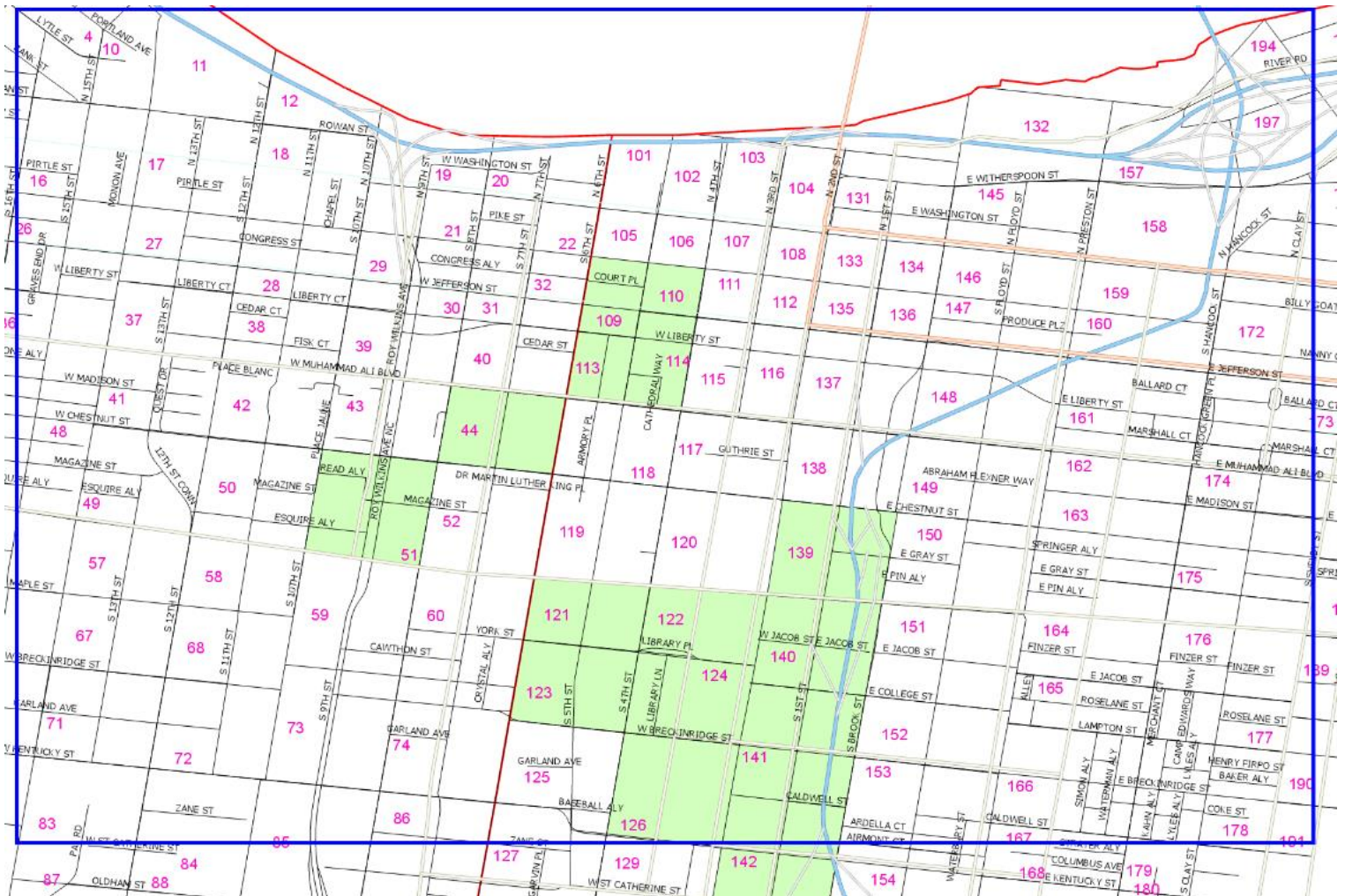# Case Study

Role

You are working with the local historical preservation alliance and you have been assigned the task of using historical Sanborn maps to extract information about the downtown of Louisville KY and compare them with recent four band aerial imagery. A former intern has already digitized a portion of the city. Request approval for your area of choice from your instructor by sending the cross streets to be used and the Sanborn map number. At least six discrete classifications are required of the aerial imagery. The designer should draw conclusions about the classified area from the historical and recent data. The classification of the aerial image must use the near-infrared, red and green bands.

Problem

There is an ongoing project with students digitizing historical Sanborn maps of Louisville KY from 1905. Project work, when appropriately completed, will be integrated into the existing

1905 Historical Mapping Project. Extra points beyond the course requirements will be awarded for those individuals whose data is integrated into the project.

http://216.69.2.80/Learning_Modules/GIS/CIT225/Storyline/Remote_Sensing_Storyline_Output%20-%20Storyline%20output/story_html5.html

Project Area:

West boundary – 14th St.

North boundary – Ohio River

South boundary – Kentucky St.

East boundary – Shelby St.

Rubbersheeting

http://216.69.2.80/Learning_Modules/GIS/CIT225/Storyline/Georeferencing%20-%20Storyline%20output/story_html5.html

Digitizing

http://216.69.2.80/Learning_Modules/GIS/CIT225/Storyline/Digitizing%20-%20Storyline%20output/Digitizing%20-%20Storyline%20output/story_html5.html

Case Study Requirements
1. Overview map of your region being analyzed
2. Georeferencing
3. Digitize – use the lesson document as an example
   a. Create new layers in a geodatabase
   b. Create domains
   c. Required layers and Attributes
      i. Streets (polygon)
         1. Name
         2. Width
      ii. Buildings (polygon)
         1. Construction type
         2. Comments
      iii. Water lines (polyline)
         1. Diameter in inches
      iv. Parcels (polygon)
         1. Number
         2. Street
         3. Comments
      v. Blocks (polygon)

<li value="1">Number

    d. Make sure snapping to vertexes is used

<ol start="4">
Maps showing the aerial image and the raw Sanborn map
Map showing the classification of the aerial image
Map showing the digitization of the Sanborn map
Report discussing the methods and the conclusions

Technical Skills

1. Georeferencing
2. Digitizing
3. Snapping
4. Map Package
5. Symbology
6. Publishing
7. Clipping an image from a service
8. Creating a signature file for classification
9. Classification using a signature file
10. Land area in acres for each classification

Resources

There are five volumes of information for the 1905 Sanborn maps. Only volumes 1 and 2 will be used in this project, since only the downtown region of the city is part of this project.

Data Source: Kentucky Digital Library

Volume: 1 http://kdl.kyvl.org/catalog/xt7rxw47qc79_14

Volume: 2 http://kdl.kyvl.org/catalog/xt7rxw47qc79_15

Completed Pages: 44, 51, 78 (outside study), 109, 110, 113, 114, 121, 122, 123, 124, 126, 139, 140, 141, and 142. These blocks have already been digitized and are not available for this assignment.

Process: Select a map, you will have to manually step through the maps until you find one you want to use and then download it as a PDF and convert it to an image format to use in ArcMap. IrfanView is the suggested conversion program, www.irfanview.com

Suggested blocks 52, 60, 74, 119, 120, 125

Inform your instructor on your selected map before beginning.

Four band aerial image service, such as can be obtained from the Kentucky GIS department

Rubric for Part I

Assignment Requirements:

1. Map Package
2. A written Assessment of what was completed and the methods used, the report should include maps and analysis.
3. A classified map of the area selected.
4. Adobe PDF of all maps

Required Elements

40 Points

1. Selection of a single region
2. E-mail showing instructor's approval of the region
3. Maps must contain:
   a. Title
   b. Legend
   c. Directional Arrow
   d. Scale Bar
   e. Author Block
4. Appropriate symbology must be displayed

Placement and Symbolism of the Required Elements

20 Points

1. Appropriate classification, including appropriate colors
2. Appropriate labels

Required Technical Skills Demonstrated

20 Points

1. Creating a Map Package
2. Appropriate and accurate georeferencing
3. Use of snapping
4. Appropriate analysis of the produced maps with conclusions
5. Embedding maps into the technical documents

Creativity

20 Points

Creativity will include presentation and how appealing it is to the user. Half of these points will be dependent on how well the designer completed the assignment. The other half of the points in this section will be based on the functionality and appeal of the maps. The instructor can choose to award more than 20 points to maps that far exceed the requirements.