

## *Geography 586 / Term Project Status Report - Week 7 / Bruce Kinner*

The following items on the term project proposal have been completed.

Georeference USGS 7.5' Quad 'Cedar Rapids South' 1994 (see Figure 1)

Georeference USGS 15' Quad 'Cedar Rapids' 1891 (see Figure 2)

Notes on 1891 map:

At the Iowa DNR GIS Library I was hoping to obtain a 7.5' quad from the 1950s or 1960s. Indeed some of these maps were available; unfortunately the one I wanted was not available. I did find a 15' quad from 1891. While the map is satisfactory it does have the following impacts on the project:

The land contours are 20' instead of 10' so there is a much smoother appearance to the surface. The accuracy of the map is questionable (no National Map Standards!). It was very challenging to georeference and the result is significantly worse than the 7.5' modern quad.

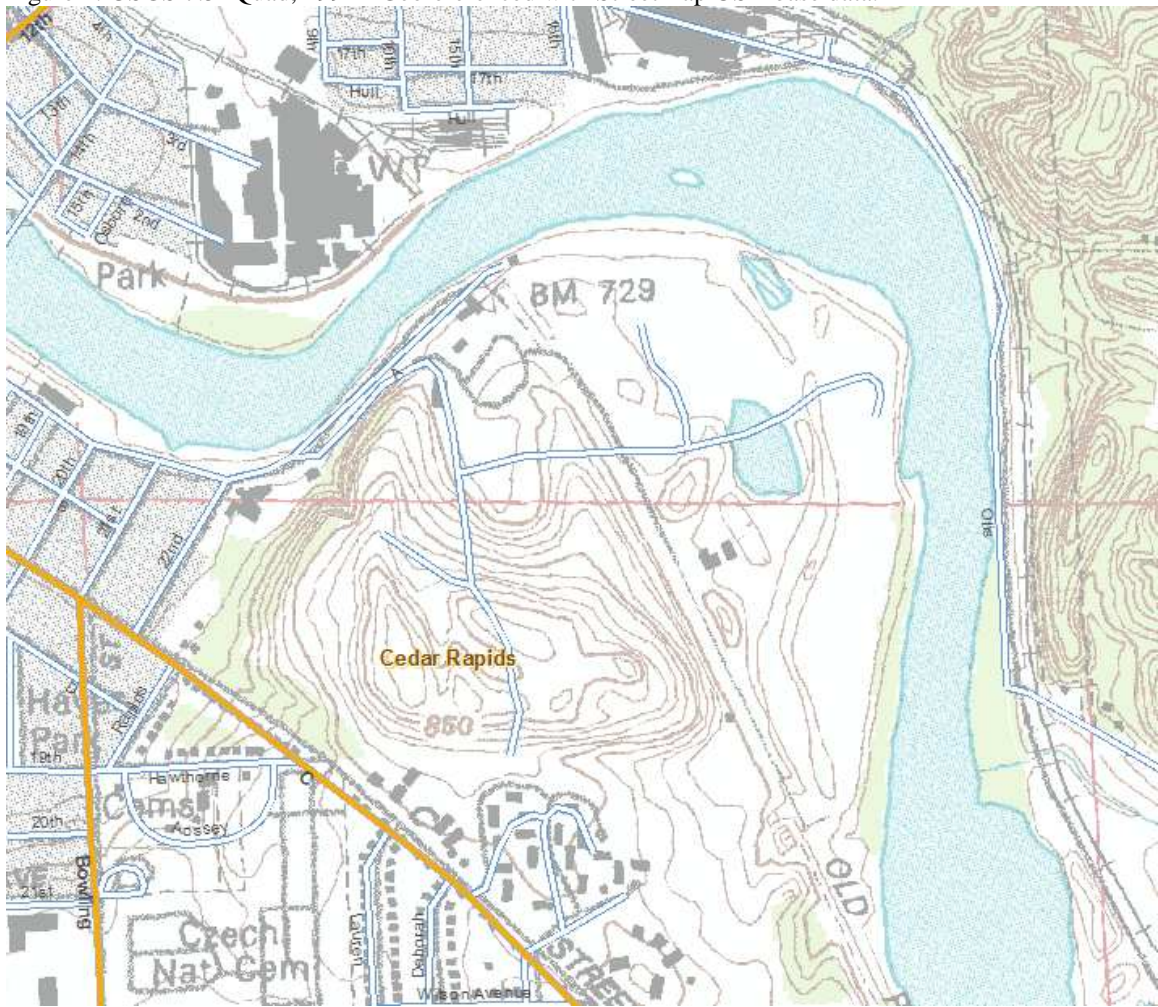
While the project can still be completed, the comparison is likely to be more between the overall shape of the basin pre-1900 vs. 2000 and much less on the landfill. This is probably for the best as the landfill shown on the 1994 is unlikely to be its actual shape as it was closed and capped in 2007.

In yet another odd data timing issue, LiDAR data has been collected for almost entire state of Iowa - but not Linn County! If the data was available it would have saved time and resolved the data issue with the current topology of the landfill.

3D Analyst - I have been working through the ESRI Virtual Campus course on 3D Analyst. Tonight's lesson - create a TIN!

Plans for the next week - Digitize the contours for the 1994 and 1891 maps. Then build the TINs and calculate the volume and surfaces up to 731 ft (the stage of the flood).

Figure 1: USGS 7.5' Quad, 1994 - Georeferenced with StreetMap USA base data.



A topographic map of Cedar Rapids, Iowa, showing the Des Moines River and surrounding terrain. The map features contour lines indicating elevation, with brown lines for higher elevations and blue lines for lower elevations. The river is depicted in blue, flowing from the top right towards the bottom left. A black line with cross-ticks represents a railroad, running diagonally across the map. A yellow line represents a major highway, likely Highway 1, running horizontally across the lower portion of the map. Various streets are labeled, including 12th, 13th, 14th, 15th, 16th, 17th, 18th, 19th, 20th, and 21st. Other labels include "Hull", "Hawthorne", "Aossey", "Laurin", "Daberah", "Wilson Avenue", "Bowling", "Rehage", "2nd", "3rd", "4th", "5th", "6th", "7th", "8th", "9th", "10th", "11th", "12th", "13th", "14th", "15th", "16th", "17th", "18th", "19th", "20th", and "21st". The text "Cedar Rapids" is prominently displayed in the center of the map.