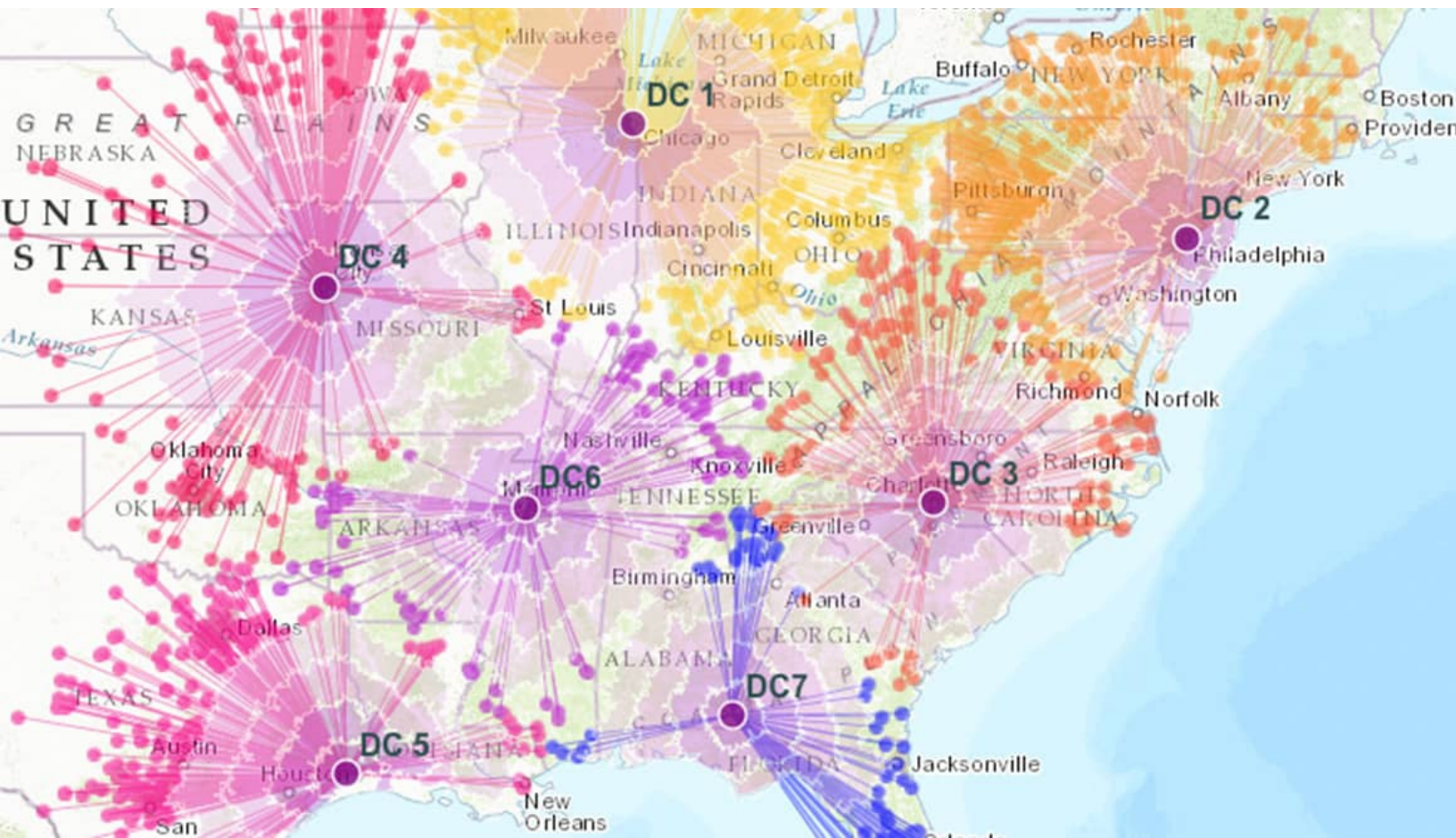# GEO157

Final Project

(due 9 am on Monday 11th June)

Andy Ridgwell

The following are the key milestones in developing and submitting the final project:

Friday 18th May – Project set and instructions given.
Friday 1st June – Project Part I form due.
Friday 1st June – Project Part II form due.
Mon 4th & Fri 8th – Project (oral) presentations.
Monday 11th June – Complete project write up due.

Note that:

- The Part I and Part II serve as guides to help you structure your project and also meet the criteria for the 'minimum' content of the project.
- You have 2 full weeks from the project being set, to the project presentations.
  All presentations must be handed in (via email or on a USB pen) by the start of class on Monday 4th June. (i.e. as per the paper presentations)
- The time available from the project being set, to hand-in of the written report, is 3 full weeks.

Project Guidance

Careful design at the beginning of a project will help you avoid hours of unnecessary work and redundant tasks. There are five basic steps to carrying out a GIS project:

1. *Research question and project goals.*
   - What is the purpose of the project?
   - What is the research question?
   - What is the spatial extent (total area) and grain size (ground resolution) of the study?
   - What type of spatial data do you need to achieve your goals?
   - What are the sources of these data?
   - What are the appropriate types of data to answer these questions?

2. *Methodology.*
   Constructing a logical spatial analysis flow chart that details the project steps will make the success of the analysis more likely. What types of analyses will you perform? Overlays? Multivariate regressions? Spatial interpolations? The spatial analysis flow diagram should include:
   - An outline of the procedures required for the data.
   - A logical sequence of procedures to be performed.
   - A list of all the data required for each step.

3. *Data.*
   Before you embark on your project, you should do an inventory of the data requirements and sources of information. Even with the widespread availability of digital data on the Internet, many GIS projects are mired in data collection, input, and integration. Check if the data are already in digital format. Will you have to scan in paper maps or input data from statistical yearbooks?

4. *Analysis and accuracy assessment.*
   Often you will find that once you start the project, there is a need to revise the procedures originally intended. Once the analysis is complete, you should evaluate the accuracy and validity of the results. Fieldwork may be required.

5. *Presentation.*
   The results will have to be presented in a format suitable for the audience, so be sure to consider your audience when preparing your report and oral presentation.

Project Presentations

- Presentations will take place during the classes of Monday 4th and Friday 8th June. Unless you have notified the Instructor with a valid reason for not attending one class or the other, the time and day will be decided. You will be notified of your time/day, by the start of class on Monday 4th. So come prepared to be first(!)
- Time allowed is 5 minutes (plus 2-3 minutes for questions).
- The length of the presentations is deliberately short to reduce the preparation burden and stress (hopefully). There will be a points penalty if your presentation goes over 6 minutes.
- The presentations need to be created in Powerpoint (or otherwise created digitally, and saved as a PDF) and in fairness to people going first (vs. those who present at the end of the week), **ALL presentations files need to be handed in at the start of class on Monday 4th June**. Presentations are to be handed in via a USB pen drive (or emailed to andy@seao2.org at least 30 minutes before the start of class).

Presentation Guidance

The general format of your presentation might be:

Introduction :
- – What is the question you are answering?

Data sets :
- – What are they? Datum? Time period?
- – Were did you collect them?
- – How will they help you answer the question?

Analysis : (conducted on each dataset)
- – Why did you use these analysis tools?
- – Which analysis tools did you use for which datasets and why?
- – How do you synthesize these analyses to answer your primary research question?

Results :
- – What do your analyses show you?
- – Were you able to answer your question?

Conclusions

The presentation should be given as though you were communicating your results to your employer and colleagues. The presentation should cover: 1) the original goal or hypothesis of your GIS project 2) the conclusions reached in your GIS project, aka the answer to your problem/question you posed.

Tips

- Include as many complete figures as possible from different stages of the project.
- Show the evolution of your analysis.
- More figures and less text.

Project Report Write-up

Your final report should be roughly 5 pages (single-spaced) of text plus additional pages for figures and references. The report should provide a description of your GIS project and should draw from information you included in the Part 1 and 2 assignments. Your report should also include a detailed description of the analyses performed, including explanation and interpretation. Use figures and tables of relevant data that support the results presented.

The text of your report should reference (e.g. 'see figure 1' or '(Figure 1)', etc.) any tables, graphs, or maps that describe data, methodology, interpretations and conclusions. The report should be broken into appropriate sections (e.g. Introduction, Data and Methods, Analysis, Interpretations and Conclusions). Be sure to cite any external references that you used in your report, including data sources. The report will be graded on structure, clarity, spelling, and grammar. The report should be profession-quality work, something that you might turn into your boss if you were working as a GIS analyst. The title of your report should be descriptive (and creative!).

Be sure that your report describes:

1. The original goal or hypothesis of your GIS project.
2. Data used and the purpose of each data set used, including relevant information about the spatial resolution.
3. All data analysis that was completed.
4. Interpretations and conclusions reached in your GIS project (or, the answer to your hypothesis).
5. Error analysis or any relevant information about the quality, limitations, and errors in the data.