



M.S. GIS
Portfolio Defense

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December 9, 2014

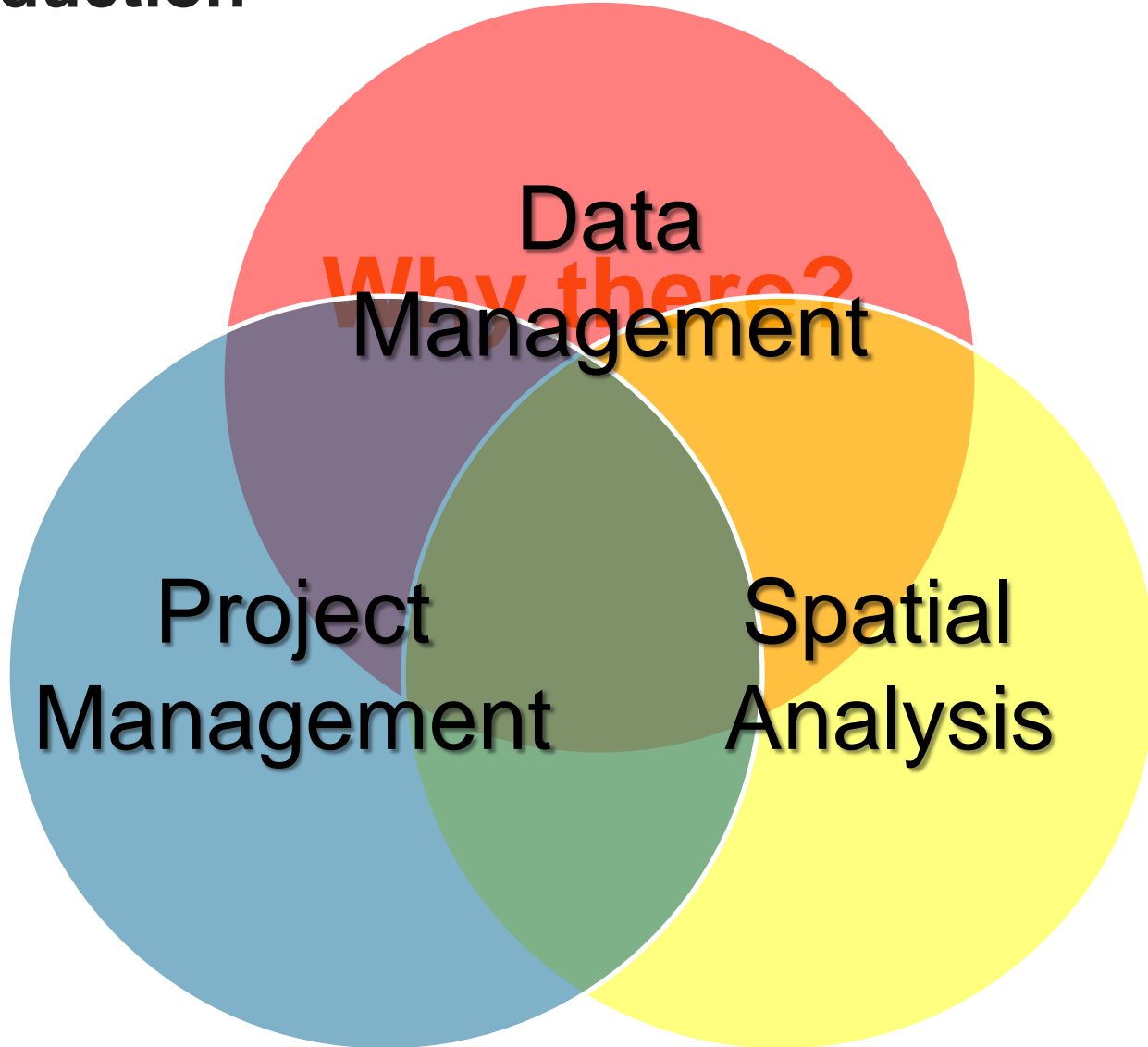
Agenda

- Introduction
- 5 Example Projects
 - GIS & Python
 - Spatial Modeling with GIS
 - GeoComputation
 - Capstone in GIS
 - Spatial Data Design
- Other Projects
- Conclusion
- Questions & Discussion



Introduction

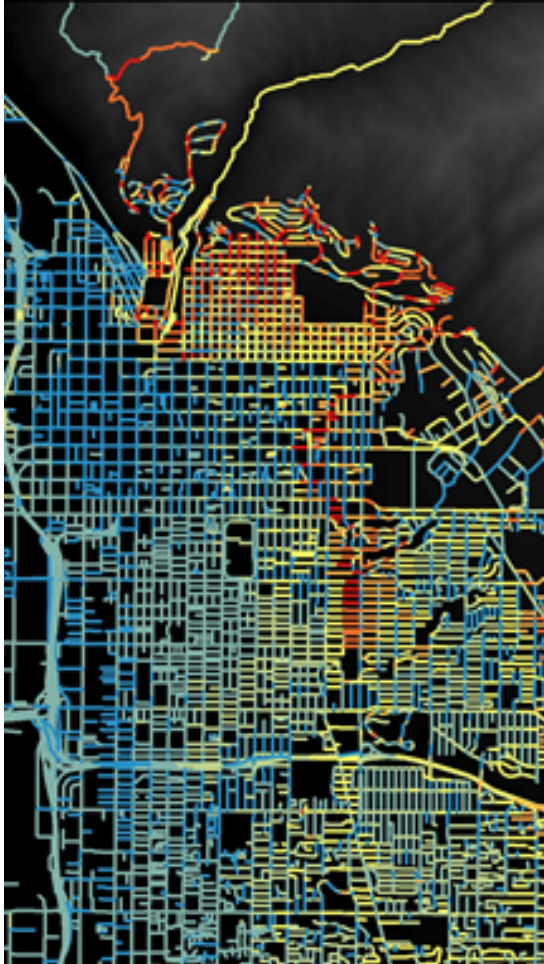
Introduction





GIS & Python

GIS & Python



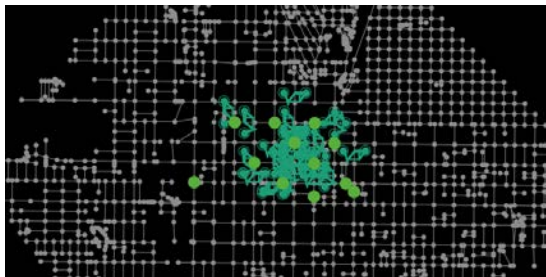
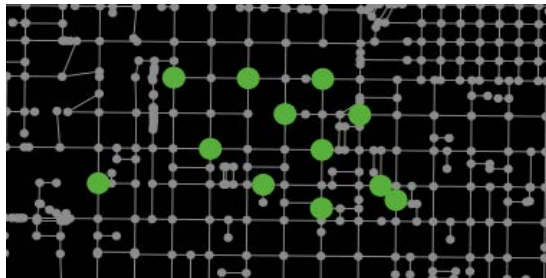
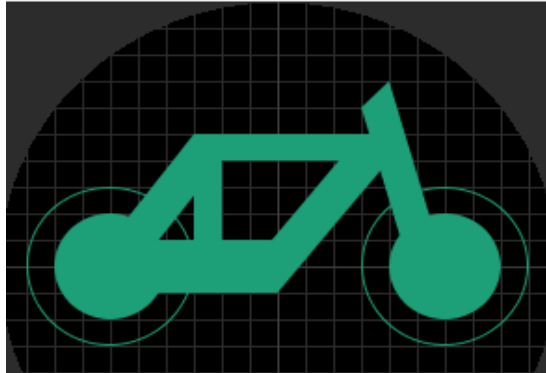
Cumulative Non-Negative Elevation Gain: Calculating Elevation Change on Wasatch Front Roads

- What is Cumulative Non-Negative-Elevation Gain?
- What was my objective?
- How did I make my calculations?
- In what direction can future work be taken?



Spatial Modeling with GIS

Spatial Modeling with GIS



The GREENBike Model: An Agent-Based Approach to Model a Bike Share Program

- What are Bike Sharing Programs (BSP)?
- Why are BSP ideal for being represented as an agent-based model?
- What emergent behaviors were captured by the model?



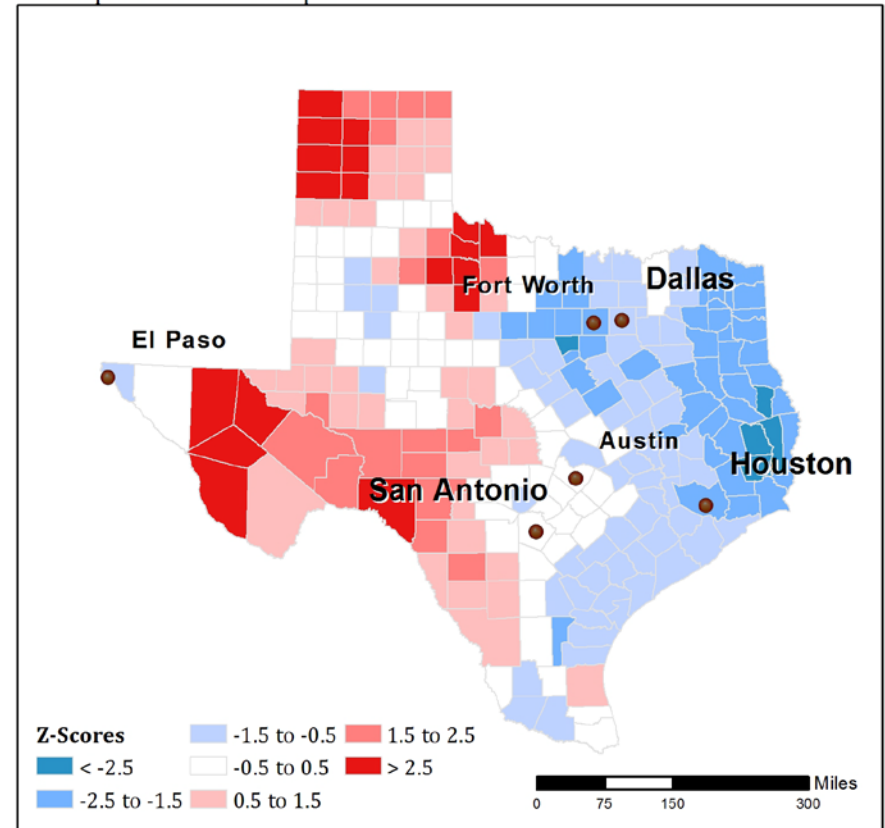
GeoComputation

GeoComputation

A Gi Statistic Analysis of Municipal Water Consumption in Texas

- Can linear and non-linear data reduction methods be compared?
- Why G_i ?
- Can GeoComputational methods replace traditional quantitative spatial analysis?

Municipal Water Consumption



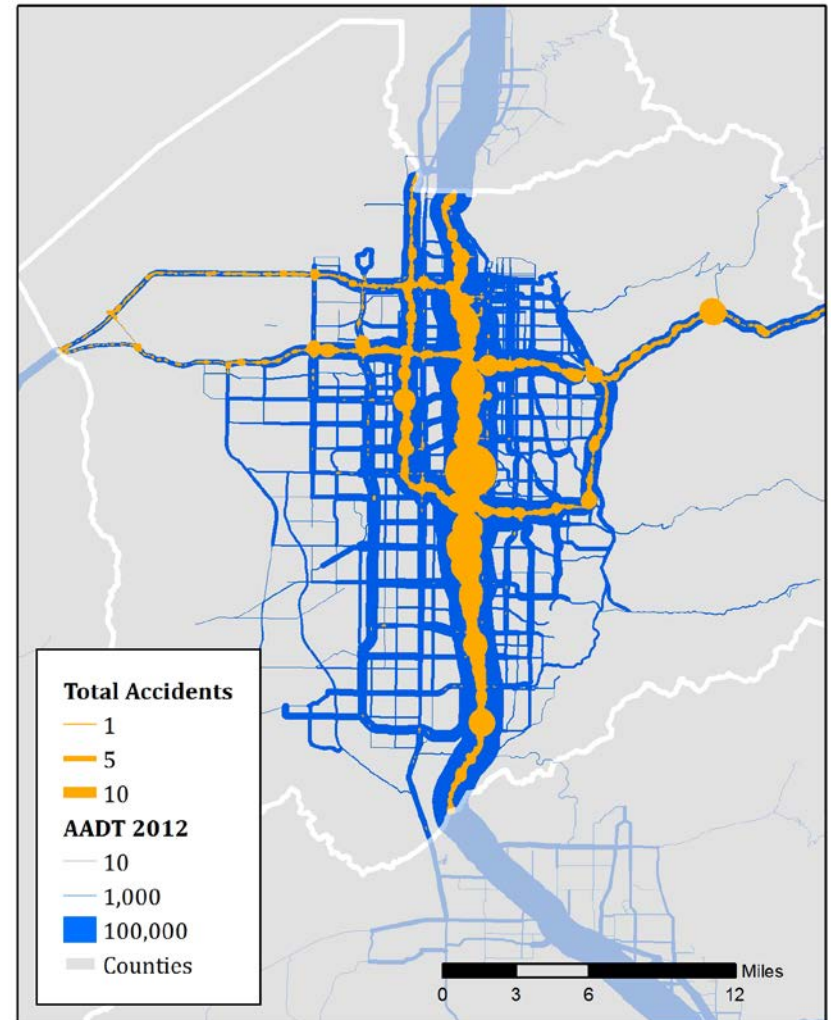


Capstone in GIS

Capstone in GIS

Visualizing Roadway Safety Data; A New Approach

- How can roadway related safety data be presented to the public in a meaningful way?
- Can a data management project lead to a sophisticated analytical result?



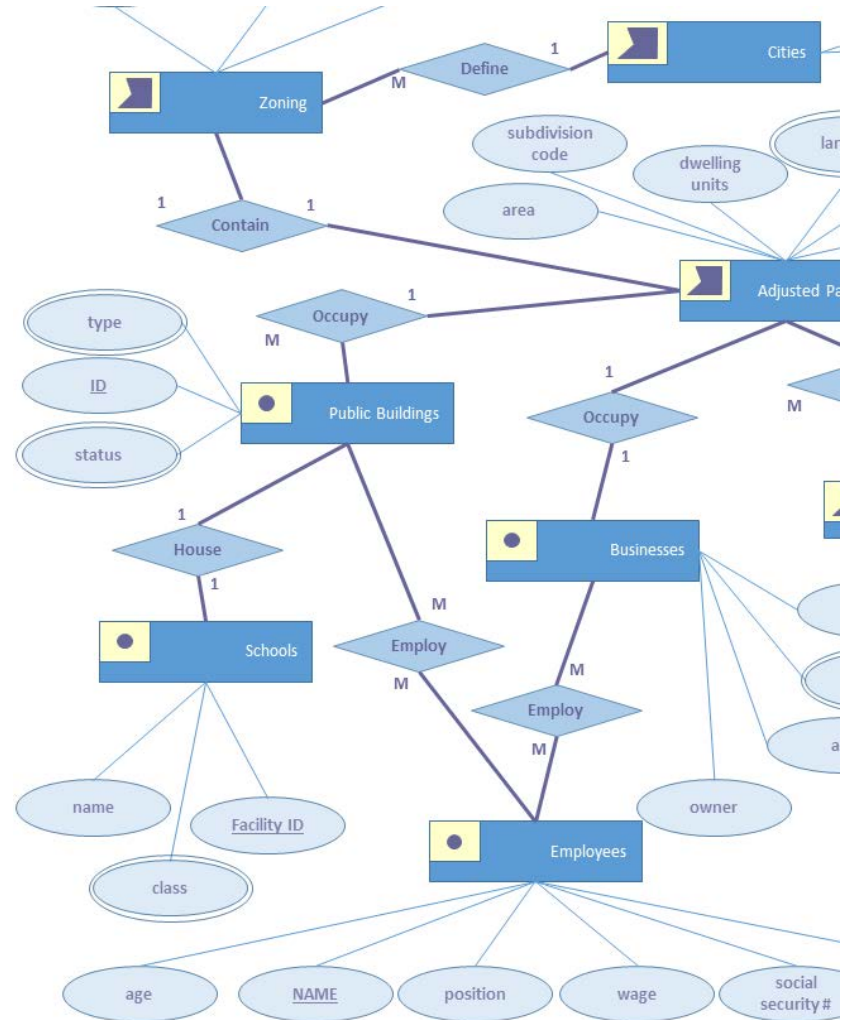


Spatial Data Design

Spatial Data Design

Anytown, USA: Designing a Spatial Database

- How can a municipality store its spatial data in a database?
- What steps are needed to create a logical, conceptual, and physical model of the data?



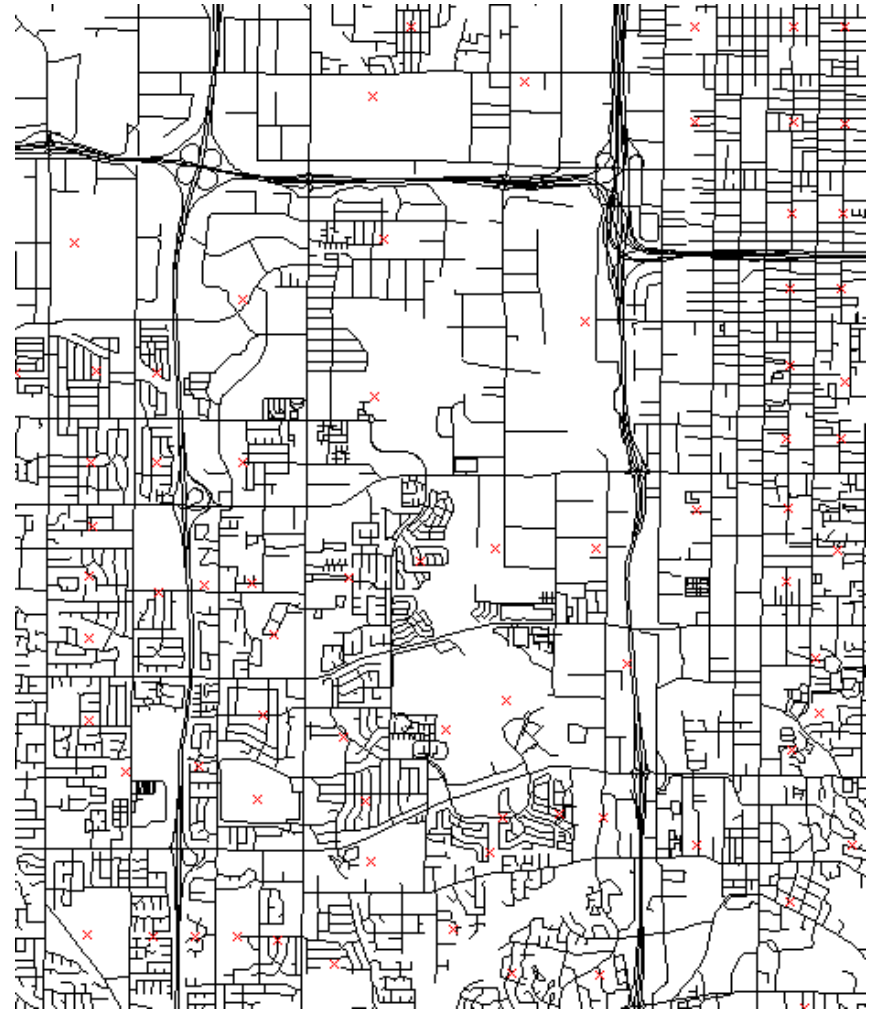


Other Projects

Other Projects

Machine Generated TAZ: Using GRASS to Automate the Delineation of Transportation Analysis Zones in Salt Lake County

- Open Source Software should not be seen as a “no-cost” substitution for commercial software!



Other Projects

Bicycle Ridership in Salt Lake County Utah

- A bigger dataset does not mean a higher likelihood of significant findings
- Bike trip productions and attractions are spatially auto-correlated

Creating Trust: The feasibility of Agricultural Water Redistribution in Utah

- Applying geographic thought while communicating complicated ideas to a wide audience



Conclusion

Conclusion

Why there?

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Questions?