

## City of Bryan – Information Technology Geographic Information Systems (GIS)



My internship opportunity was coordinated by the City of Bryan, Texas. I worked in the Department of Information Technology under the mentorship of the GIS Coordinator.

### A geographic information system (GIS):



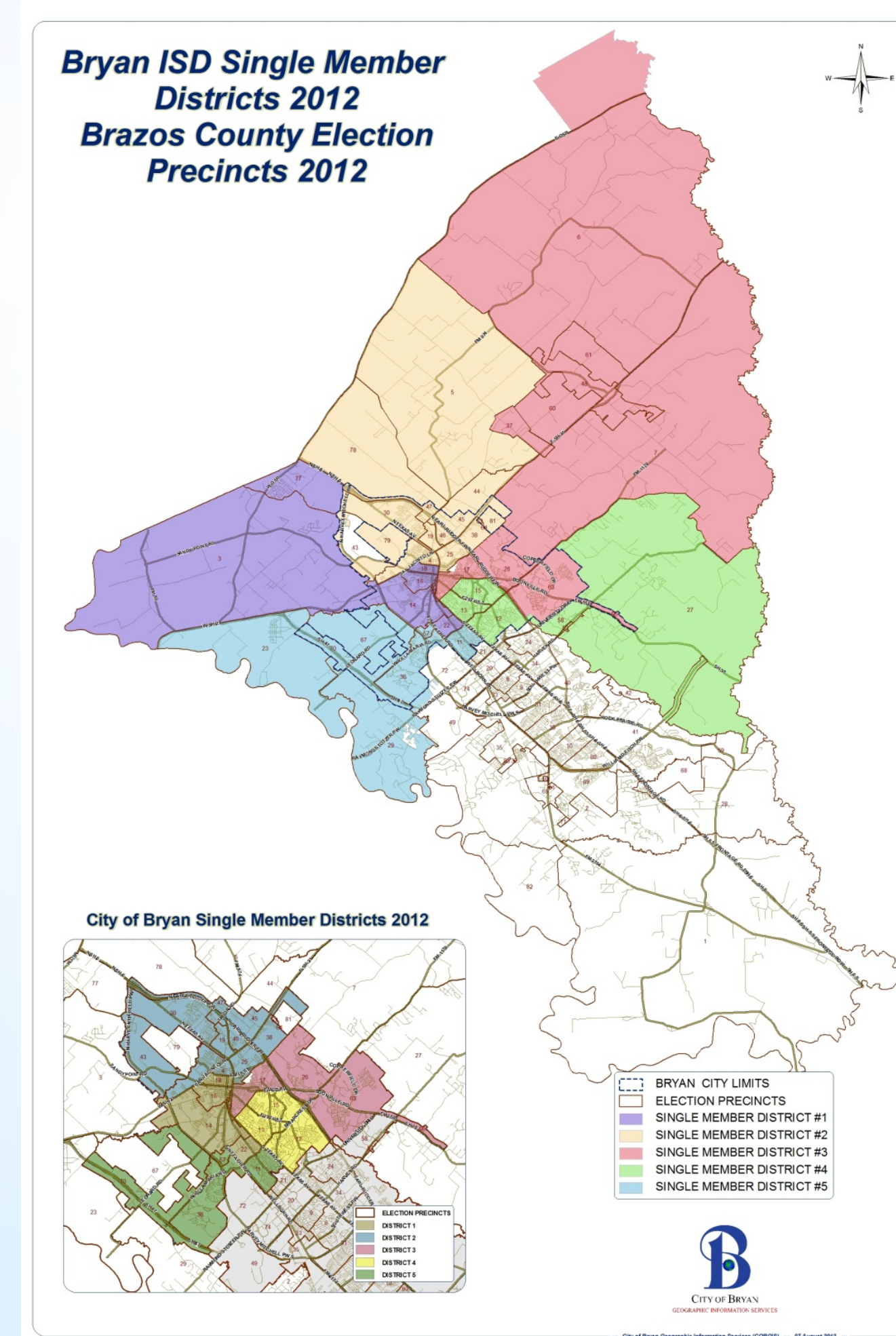
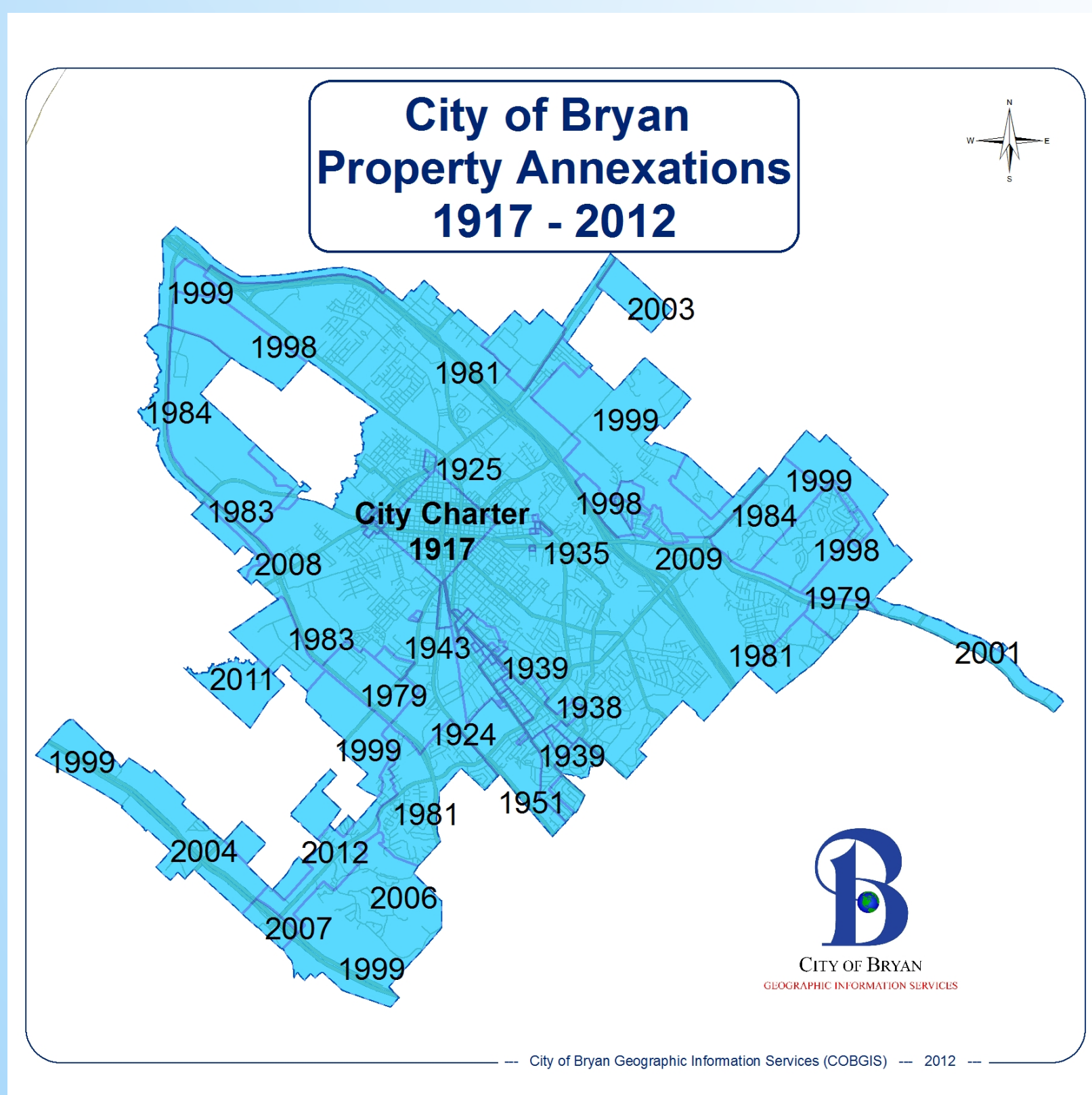
- Integrates hardware, software, and data.
- Captures, manages, analyzes, and displays all forms of geographically referenced information.
- Allows us to view, understand, question, interpret, and visualize data in many ways.
- Reveals relationships, patterns, and trends in the form of maps, globes, reports, and charts.
- Helps answer questions and solve problems by looking at data in a way that is quickly understood and easily shared.

GIS creates an “intelligent map”. Various geographic elements are presented in different layers and placed where they belong on the world. This allows for precise overlapping of layers that pertain to similar geographic regions. Once information is attached to each layer, because of the overlap, information can be obtained.

## Internship Objectives

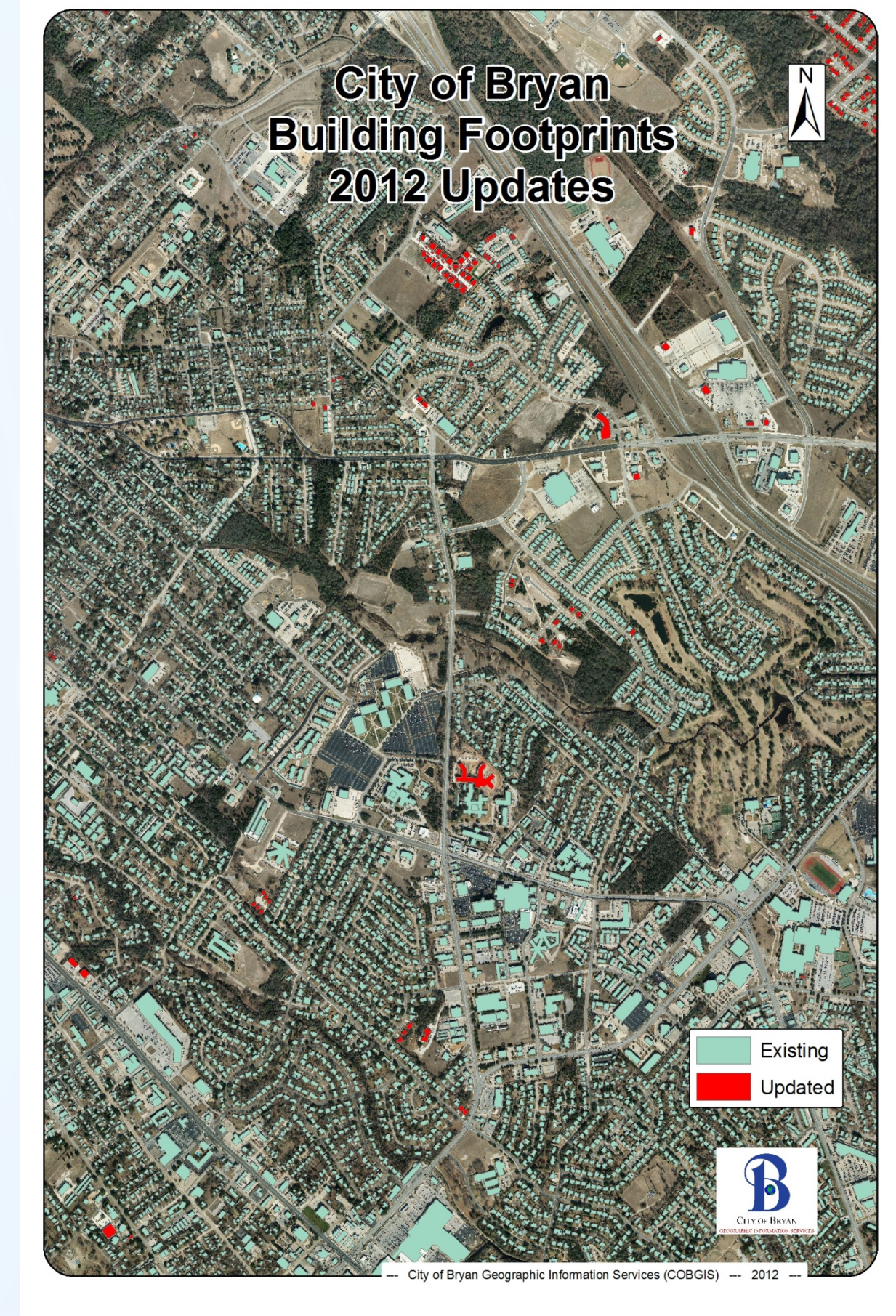
- Assist the City of Bryan Geographic Information Services (COBGIS) staff with data creation and maintenance of the City’s Enterprise GIS.
- Perform day-to-day development and maintenance of GIS datasets specific to the needs of all departments within the City of Bryan’s organization.
- Assist in the creation, design and development of new databases for all City departments with primary emphasis on the following:

- **Engineering and Planning**
- **Water Services and Solid Waste**
- **Traffic and Transportation**
- **Fire and Police**



## Description of Experience

Through this internship I became familiar with the software needed for GIS, in this case it was **ArcGIS 9.3.1** and **ArcGIS 10.0** software. I completed numerous training exercises within **ArcGIS** software in addition to a 9 hour online course. **ArcGIS** is software for GIS (Geographical Information System) data editing and analysis. This product suite consists of a group of geographic information system (GIS) software elements produced by Esri. Tools are provided to users from the very basic of data digitizing to the sophisticated modeling. **ArcGIS** is a complete integration system which helps organizations of any fields in asset/data management, planning and analysis, business operation and situational awareness. This system is for people who rely on accurate geographic information to make decisions.



## Relationship to Career Goals

- Determine facility/pipeline construction and operation impacts (wetlands, historical/cultural resources, roads, residences, environmentally sensitive areas, endangered species, etc.).
- Determine risks to facilities/pipelines (floodplains).
- Display and analyze soil and groundwater contaminant concentrations and movement.
- Simply display the geographic location of facilities/pipelines.

My goal is to combine my knowledge acquired during my internship using GIS software and my education obtained at Texas A & M University and utilize them both as I pursue a career in the near future.

## References

- <http://www.esri.com/>
- <http://www.epa.gov/>
- <http://www.bryantx.gov/gis>



## Acknowledgements

I would like to thank the City of Bryan’s Department of Informational Technology for providing me this internship opportunity. I would especially like to thank my supervisor Dale Kubenka, GIS Coordinator for the City of Bryan, who was willing to mentor and helped teach me everything I know about GIS software. I would also like to thank Dr. Charles Kenerley for all of his help and support by reading and editing the reports I submitted throughout the internship experience. **Sponsors for high impact experiences for BESCO and the BESCO poster symposium include the Department of Plant Pathology and Microbiology, the College of Agriculture and Life Sciences, the Office of the Provost and Executive Vice President for Academic Affairs.**