

Development Site Selection for Four Alachua County
Municipalities

Team 1

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Introduction and Objectives

Alachua County, located in North Central Florida, has experienced rapid growth and development in the last few decades due to an increase in the student population. The University of Florida is located in the center of town and provides many opportunities for economic growth and further development of surrounding areas. Housing developments and recreational areas are being built in Gainesville and spreading westward. However, some sites remain undeveloped and, with a population that shows no sign of decreasing, more residential sites in surrounding areas would ease the influx of students. Additionally, Alachua county municipalities must match development needs with the aesthetic and historical landmarks of their respective areas.

The main goal of the project was to identify a suitable development area that will house a small apartment complex. It was also a goal to ensure that this development meets our selection criteria based upon social, physical, economic, and environmental factors. Another main objective for our redevelopment areas was to raise the market land values for the respective parcels significantly in order to boost adjacent land values and thus redevelop the surrounding community. In order to reach these goals, four municipalities in Alachua county, including Alachua, Newberry, High Springs, and Hawthorne, were considered for development. An extensive GIS database from the Florida Geographic Data Library (FGDL), containing social, economic, and environmental factors provided the necessary data for site selection.

Selection Criteria

The selection criteria were based on the social, physical, environmental and economic factors provided from the FGDL. When selecting parcels, we considered all of these factors and their relation to one another. The social criterion focused on individuals between the ages of 20 to 30. We felt that this was the portion of the population that would most likely choose apartment-style living. Individuals in this age group are those that are either still in college or just beginning their career. Many do not have the income or stability to invest in a house at this time in their lives. The other social aspect considered was distance from historical landmarks. We felt that building nearby historical sites would increase the market land value. Additional consideration was given to sites that were located within one mile from a major road and were between five and ten acres in size. Sites meeting these physical criteria are probably more likely to have existing infrastructure, leading to fewer initial costs in the development process. We wanted to keep the development close to a major road for easy accessibility. The apartment complexes would be smaller in size considering the existing densely populated areas. As a result, we chose parcels that were between five to ten acres because we believe this size matches existing development patterns.

Environmental factors, including distance from flood zones and conservation areas, were also taken into consideration. Setting a buffer of 500 feet would provide adequate protection under flood conditions and is respectful to conservation efforts. However, 500 feet is still relatively close to conservation areas, which may increase the market value. Finally, we decided to develop in areas that are currently undeveloped, yet have a high potential for increased market value.

Methodology

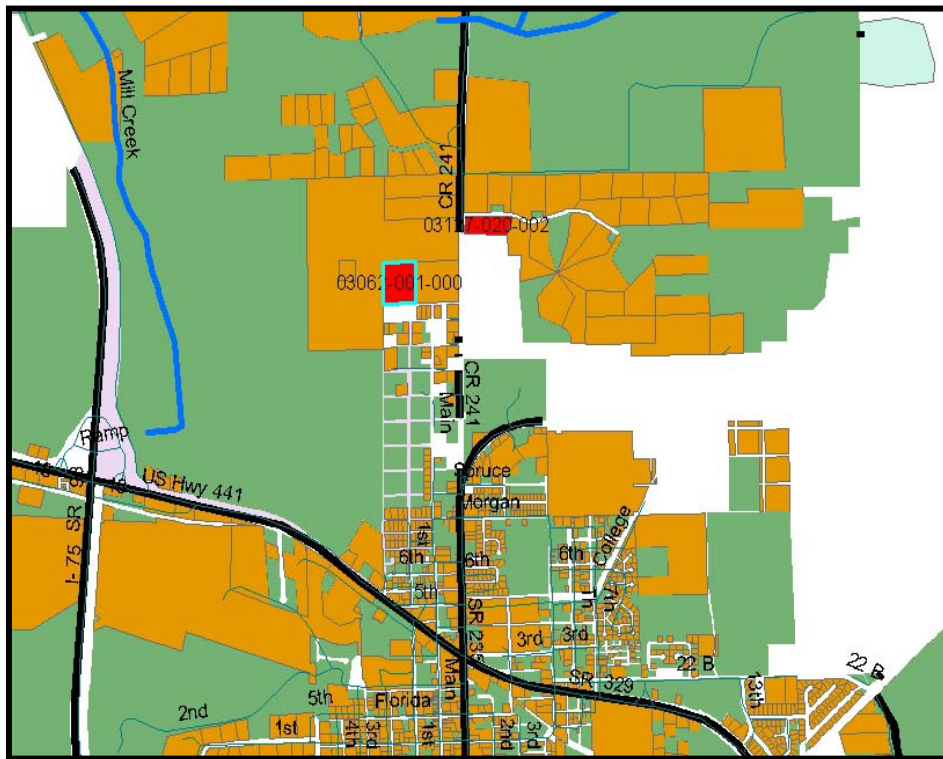
From the FGDL, all relevant information was clipped around our respective municipalities. Buffers were created around streams, flood zones, conservation areas, historical sites / landmarks, and major roads. After creation of these buffers, we narrowed potential parcel locations via the query function in ArcGIS. This process basically involves the removal of parcels that fell within our “no-build” buffer zones. Parcels that met our physical criteria were then analyzed for target size (5-10 acres). Once again, this involved the query function within ArcGIS. Concurrently, we joined demographic census information with the spatial representation of census areas. This allowed us to view areas containing a moderate density of 20-30 year-old individuals. We established a union between physical parcel locations and target-age zones to identify parcel sites that meet our criteria. Additionally, once given these sites, we picked sites with land use codes suggesting no existing development (e.g., vacant and without buildings). *For detailed flow-chart, see appendix.*

Results and Conclusions

Though each parcel was selected based on the model criteria, each municipality presented unique challenges. Alachua, Newberry and Hawthorne contained few historical sites, eliminating the need for this selection. Alachua was the only municipality that contained streams located in areas that were prospects for development. We felt that a parcel that was located near a stream would increase the market land value, as well as add to the aesthetic value of the development. Also, streams can provide for recreational activities for the residents through boating and fishing.

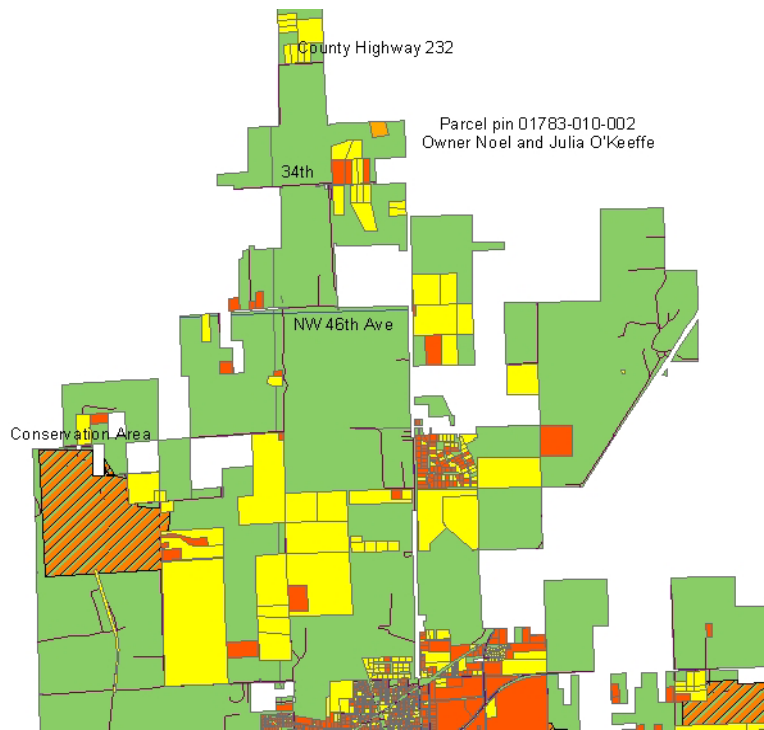
The final parcel selected for each municipality was based on all of the criteria set in the initial model, including the additional unique factors for each. The Alachua parcel is an eight-acre plot of dairy land (PUSE=6800), with a land market value of \$28,000. It is one mile to I-75 and U.S. Highway 42 interchange. It is also near other developing areas, located one mile from downtown Alachua.

Figure 1: Alachua Parcel Selection



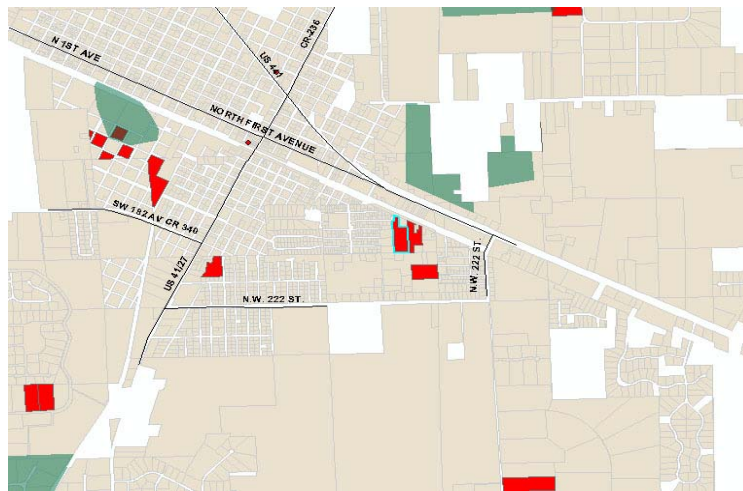
The Newberry parcel selection is a ten-acre vacant lot (PUSE=0000), with a land market value of \$45,000. It is located $\frac{3}{4}$ mile from NW 34th Avenue and 3 $\frac{1}{2}$ miles from a conservation area. Located 4 miles from downtown Newberry, it is a developing area but still retains rural features.

Figure 2: Newberry Parcel Selection



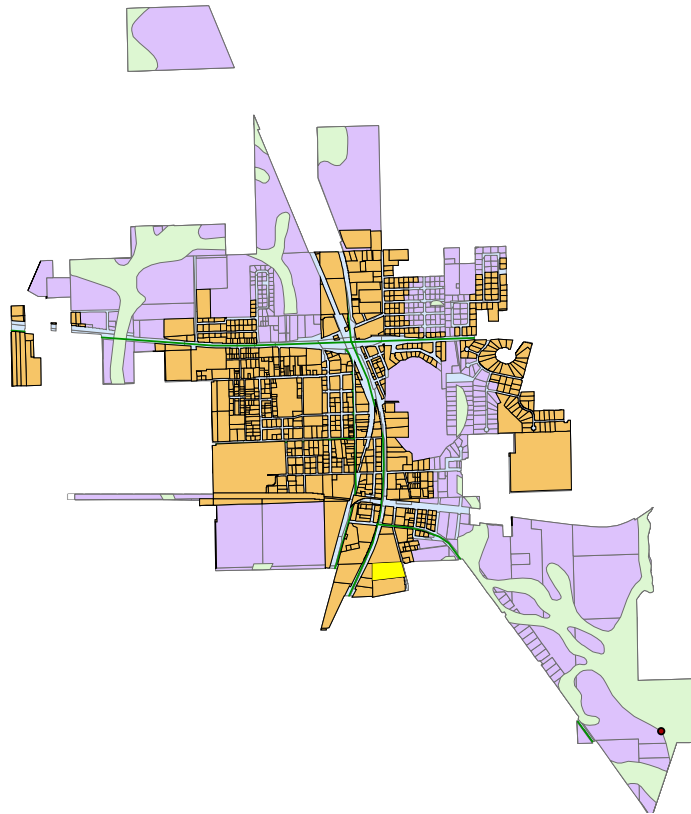
The High Springs parcel selection is a six-acre vacant lot (PUSE=0000), with a land market value of \$18,200. It is located 700 feet from U.S. 27 and falls within ¼ mile from a conservation area and 1 mile from a historic marker (railroad).

Figure 3: High Springs Parcel Selection



The Hawthorne parcel selection is a five and a half acre vacant lot in South Hawthorne (PUSE=0000) with a market land value of \$13,800. Surrounding parcels have a significantly higher land market value, which may result in an increase in the selected parcel's value.

Figure 4: Hawthorne Parcel Selection



After a parcel was selected for each location, we established a set of criteria to precede actual development. These steps may take place during a five-year development process. If zoning codes permit, consultation with the landowners of the parcels selected would be necessary. Without this consultation, development cannot progress legally and would be an ethical nightmare. With permission, the land would be purchased and interested developers / contractors contacted. Following extensive research, the

necessary changes regarding infrastructure would need to occur for further development.

With an established timeline for construction, the plan will be discussed with surrounding parcel owners and neighborhoods to ensure that the community is aware with the development plans.

By first constructing a model for development, we were able to select parcels based on the model criteria. The model was used separately for each of the four municipalities, and additional criteria was added based on the areas unique characteristics. Following this model for each area allowed us to develop similar results. This enabled us to unify the project results and create a five-year development plan that is similar for each municipality. This project gave us hands-on experience in applying GIS functions to real world situations.

APPENDIX

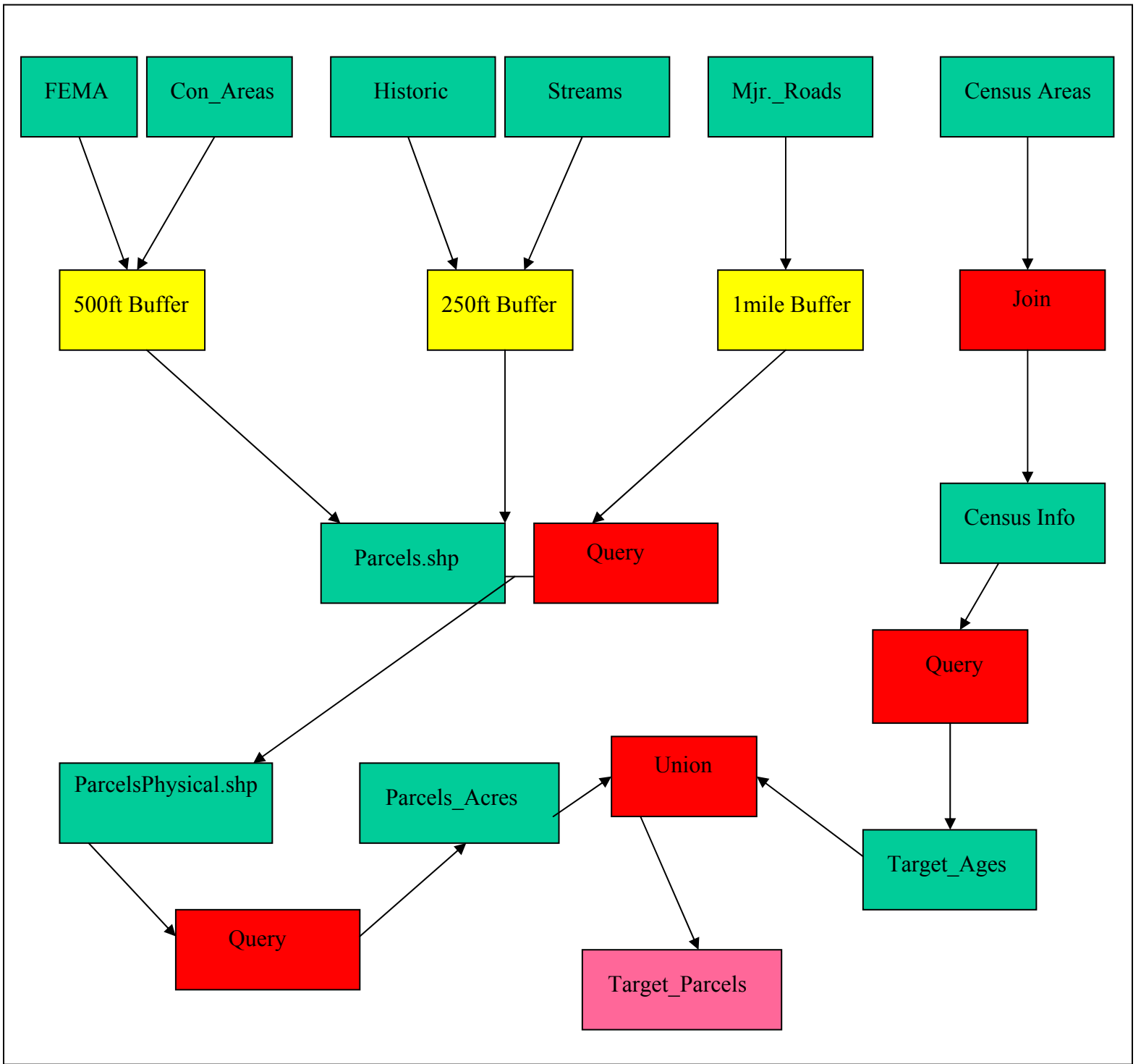


Figure 5: Flow chart detailing GIS methodology for Alachua county development plan.