

# Strengthening Alachua County's Food Security for Students and their Families

URP 4273 Survey of Planning Information Systems  
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# Main Goals

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- Locate the primary and secondary student distribution in Alachua County
- Identify public lands that are suitable for viable food production in close proximity to the students of Alachua County
- Facilitate the provision of fresh, local, and organic food to students with a focus on low-income schools as well as the large college student body in Gainesville
- Advocate gardens as sites to improve the quality of life through education, job development, and multiple volunteer opportunities for local students
- Stimulate interest and increase awareness of local food systems in the region
- Promote sustainability and healthy bodies in Alachua County

# Background, Problem Statement, Justification

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“In the past century, food production has become industrialized and globalized and in effect unsustainable. This is symbolized by the fact that fresh produce travels on average 1,500 miles from field to table in America” (Douglas Farr, *Sustainable Urbansim: Urban Design with Nature*, p. 170). Furthermore, the produce most Americans buy are grown with the use of pesticides and herbicides, which ultimately end up in our bodies after consuming these vegetables. There is a growing organic market in the United States to combat these unsustainable eating practices by utilizing natural and sustainable methods to grow food. However, organic produce can be costly and hard to find, and their availability to low income residents is severely limited due to higher prices. Food grown locally in urban community gardens is the cheapest

way to obtain organic produce. “Good-quality food is vital to the public health of a population. The economic benefits of community-based food systems include the creation of jobs and self-sustaining markets. Environmental benefits include food security, better health, neighborhood beautification, and greater connections between people and the Earth” (Farr, 170).

Another issue is a severe lack of interest in pursuing farming careers by the youth of America. Today many American students strive for professional degrees, and the career of a farmer is associated with a stigma of a job for the uneducated. This is a problem for the future of American food production because our farmers are growing older without a youthful population interested in continuing their efforts. Therefore, much of our project is focused on the needs and education of children in Alachua County. We hope that local community gardens can inspire children early on to give food production a more prominent place in their minds. At the collegiate level, our goal remains to encourage the practice of food production as an extracurricular activity. By integrating the youth into local food production, we can hopefully create at least enough awareness of food growing for future generations to shift away from the industrial farm to local sustainable food production.

A key issue for our project was the area of East Gainesville with such high levels of low income students. Our concern was the diets these children are receiving, not limited to in the school cafeteria. The cheapest food is often the most unhealthy and inorganic. Therefore, the dietary health of these children is in danger, but more broadly, all students are eating contaminated foods in their local cafeterias. The Organic Center for Education and Promotion released a new report that proclaims "anyone eating more than one serving of conventional fruits and vegetables a day is likely to consume one or more pesticide residues." It is necessary to provide our students with locally produced organic food to promote good healthier diets.

# Scope and characteristics of study area

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The project scope consists of Alachua County in the state of Florida. We used a county wide focus and looked at the entire population spread across multiple municipalities including Gainesville, Archer, Newberry, Waldo, High Springs, and Micanopy. This study area included 40 public schools for K-12 students situated across all of the population centers. The first focus area was public schools with a student body that 70% or more dependent on the free and reduced lunch program. There are eight schools in Alachua County which fit this criteria, and all happened to be elementary schools. Four of these elementary schools were concentrated in a small area in East Gainesville. The high occurrence of Free Lunch students in this area indicated high levels of poverty and thus high need for a better nutrition. These students would benefit most from a local food program, and it would help alleviate some of the federal budget that goes towards these lunch programs. We located a significant amount of suitable public lands for community gardens that exist in this immediate area. These potential garden sites were located on public lands that are undeveloped and not intersecting with conservation lands. The second focus was on public lands in close proximity to the student populations of the University of Florida and Santa Fe College. These lands fit our previous criteria or were located on the campuses of the schools themselves. Another area of our research involved assessing the possibility of using vast amounts of land on primary and secondary school campuses for gardens. We approximated that 1% of the total square footage of school parcels could feasibly be converted into school community gardens.

# Objectives to reach main goal, Criteria

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- Create a student population distribution for Alachua County with a focus on low-income student populations and college student populations
- Identify public lands not included in conservation parcels, undeveloped, near major roads, and thus suitable for food production
- Overlay the selected public lands in a close proximity to low-income schools, particularly the concentration in East Gainesville
- Identify suitable public lands in close proximity to student populations of University of Florida and Santa Fe College
- Develop strategies to include children in the farming process to strengthen science education and stimulate interest in farming
- Assert that locating public lands in neighborhoods can create local jobs
- Demonstrate that certified school kitchens as can be utilized as processing centers for food grown nearby, and this is another potential source for job creation
- Create volunteer opportunities for college students interested in local agricultural production and experience.
- Provide access to healthy, sustainable produce to all students of Alachua County.

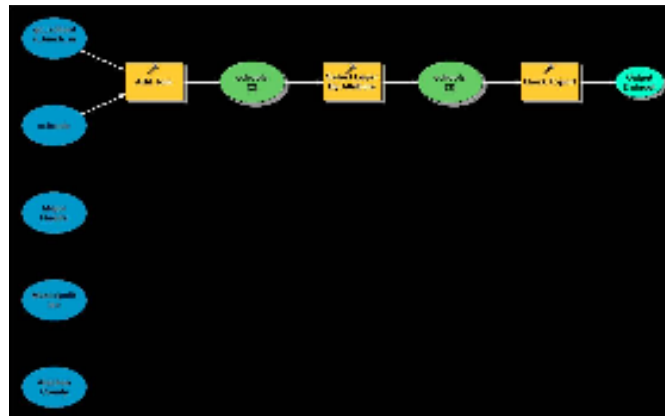
## Methodology

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While conducting our analysis of Alachua County's Food Security, several G.I.S. data files were used consistently in every map compiled. These included Alachua County Boundary, Municipalities, and Major Roads.

In identifying public schools spatially in Alachua County, we simply layered the layer files mentioned above with a Schools data file and altered the symbology to create a graphically-oriented map that was easy to read. With this map, it was apparent most public schools in Alachua County were located in Gainesville's city limits with few scattered in communities of Alachua, Archer, Hawthorne, High Springs, Newberry, and Waldo. Our group decided that every public school in Alachua County would include lands for food production on its parcel, thus servicing in some shape of form all students of Alachua County.

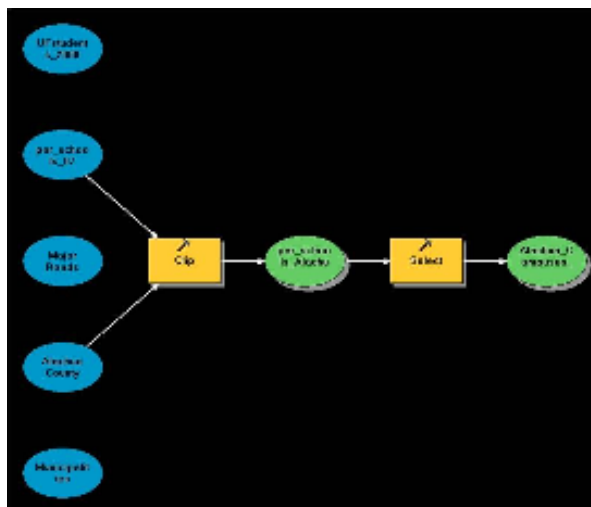
In identifying public schools with a student population that receives free or reduced lunch of 70% or greater, we also used the Schools data file and joined its table to a Schools Lunch Aid table. Next, we selected by attribute those schools with a student population that receives free or reduced lunch of 70% or greater and exported that data to a new layer. We were able to see that there are eight public schools that met our criteria in Alachua county, and those were Waldo Community School, Rawlings Elementary, Metcalfe elementary, Duval Elementary, Terwilliger Elementary, Lake Forest Elementary, Idywilde Elementary, and Shell Elementary. We also noted a high concentration of these schools in East Gainesville, and decided to include a sub-focus on this area. On top of lands on schools grounds set aside for food production, parcels in close proximity would service these schools in East Gainesville.



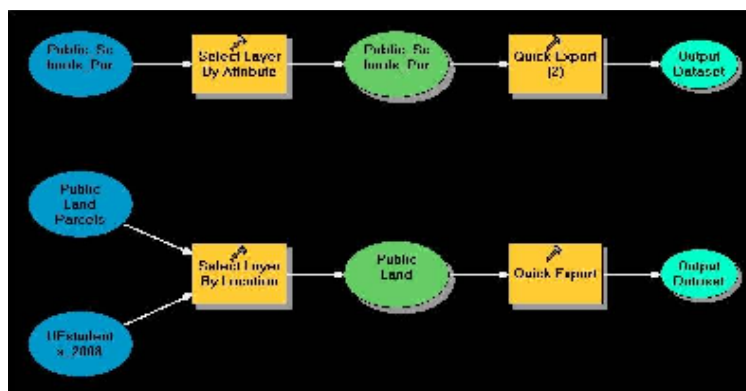
Our criteria for identifying lands were that they had to be public, undeveloped parcels that were not in conservation lands. Furthermore, we tried to only analyze lands that were near major roads and that had arable soils. However, we concluded that all the lands were relatively near major roads and that most had poor soil quality, so these criteria did not have significant impacts on our process. To identify these lands, we used a Public Lands data file, and selected only undeveloped parcels and exported that to a new layer file. Next, we merged the three Conservation data files (fnaica, fnaicb, and fnaicc) and intersected that new file with the undeveloped public parcels file. We then did a switch selection and created a new data file that only included public undeveloped lands that were not in conservation areas.



In identifying spatially where college students are distributed in Alachua County, we simply layered a College Student Population data file over our consistently used files. To identify college campus parcels, we used a School Parcels data file, clipped it to Alachua County, and selected by attribute college parcels and exported that to a new layer file. From this data, we concluded that the highest density of college students in Alachua County is in close proximity to their respective campuses of UF and Santa Fe. However, there were several clusters in Alachua's satellite communities.



Finally, to identify lands that could serve as food production sites for Alachua's college student population, we did a selection by location and selected public, undeveloped lands that were not in conservation that were three miles or less in proximity to a college student and exported that out as a new layer file.

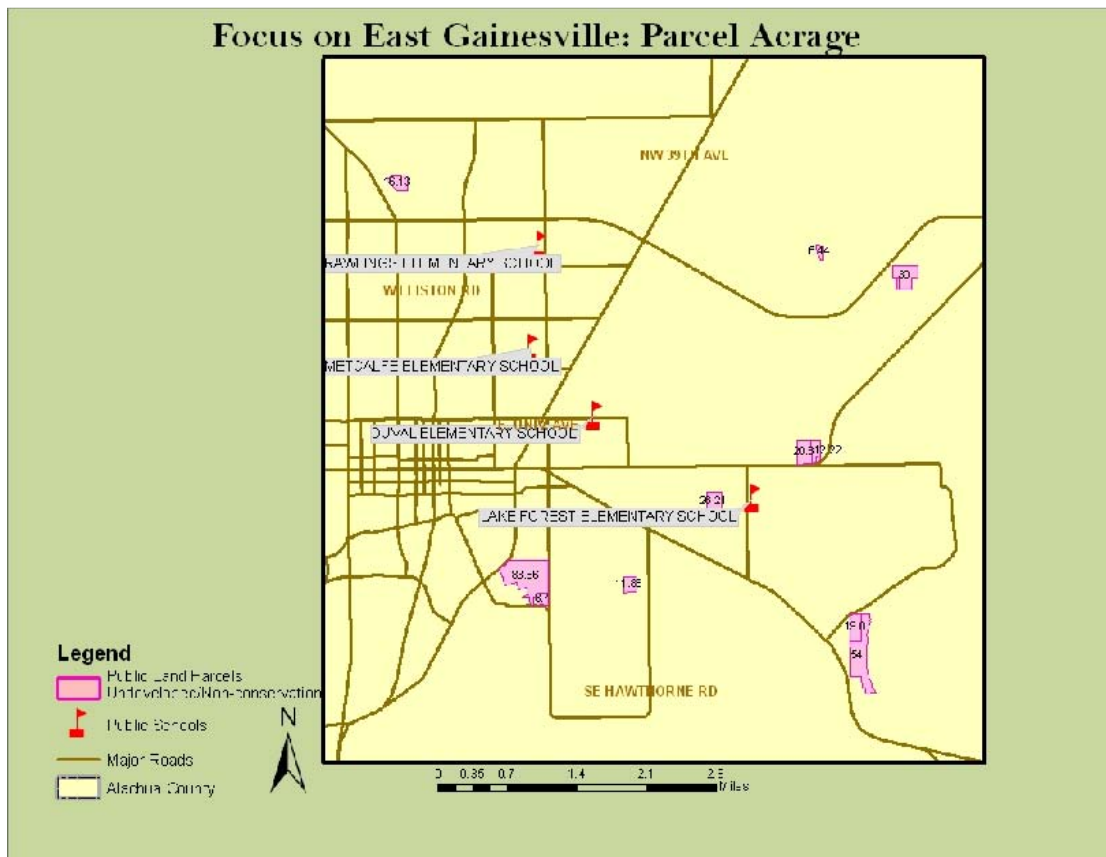


## Results and Discussions

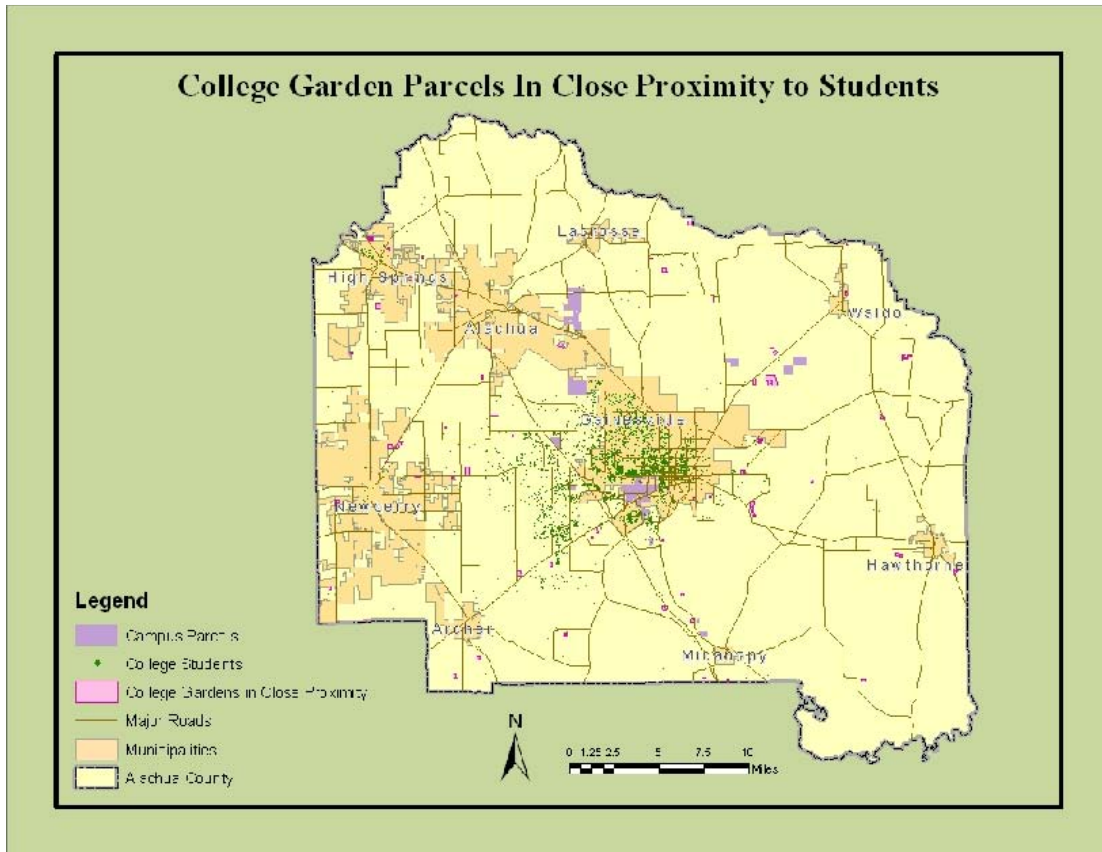
By using the four identified schools that have 70% or more of their students on free or reduced lunch, we narrowed our focus on East Gainesville. Near the schools, we identified public parcels that were undeveloped, and not in conservation areas. This selection process produced eight parcels that could be used as food production sites for these schools in need of lunch reform (see below map). Discussion of best parcel to focus on for food production was



centered around acreage. According to Yes! Magazine in spring 2009, "farms of 27 acres or less produce 10 times more dollar value per acre than larger ones." Therefore, we recommend the parcels near major roads that are within 27 acres of area or less (the map below also shows acreages for each parcel).



When considering choosing lands for college students to use as community gardens, we went with the same parcel criteria; public land, undeveloped, and not in conservation areas. To tailor those lands to college students we chose areas that were in a 3 mile proximity to college student's residences and were located on major road ways. This criteria produced 68 lands that the college population could use for food production (see map below).



As with all of lands identified so far, we recommend that sites be visited for actual ground-truthing, and from that process weeding out the lands that do not possess food production capability.

Apart from identifying public lands throughout Alachua County for student food production use, we also chose to calculate potential land uses from area school lands. Including all lands occupied by Alachua County public schools, the University of Florida, and Santa Fe College there exists 222,970,572 square footage in the county. Knowing that much of the land is occupied by building footprints, drives, and walkways, if only 1% of this land could be set aside for crop production, there would be an extra 2,229,705 square feet of possible public land that could be used as school community gardens. Knowing that a garden area of 15' x 15' has the ability to feed a household (2.34 persons in the Alachua county area), this 1% of public school

lands could feed 23,198 individuals, or 31% of the total student population (74,083 individuals). Imagine the amount of individuals that could be fed in the Alachua county area if this idea was implemented, or if more than 1% of lands were used.

## Conclusions

The final map is a synthesis of school and college campuses combined with all lands identified throughout this project: those land suitable in east Gainesville for under privileged schools, those lands in close proximity and those lands identified as prime farm land. For the last ten years there have been successful Farm to School programs across the nation, along with our proposed approach we could potentially strengthen Alachua County's food security for students and their families.

