



## **Durham County Agricultural Development and Farmland Preservation Plan**



Prepared for the Durham County Farmland Protection Advisory Board  
by Gerry Cohn, Consultant

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## **FOREWORD**

By Kathryn Spann  
Chair, Durham Farmland Protection Advisory Board

Durham County's farms provide nourishing food for our community. The farmland in our watersheds helps to preserve clean water for City residents. Farmers also pay far more in taxes than they consume in taxpayer-funded services, helping to subsidize such services in developed parts of the County. This farmland and the farming economy that depends on it are poised at a crossroads, and this Agricultural Development and Farmland Protection Plan is designed to help our County chart our path from here.

Tobacco, once the mainstay of Durham's wealth, is now a dwindling fraction of our agriculture. Commodity farming has, for a time, replaced tobacco, but cannot economically justify the current purchase price of farmland in this County. Grass-fed cattle are becoming more widespread, but are not yet marketed locally at the premium prices available through direct marketing. There is a great unmet demand for local produce, meat and eggs, much of which can be produced on relatively small parcels of land. Community gardens are in demand, to provide urban residents with ready access to fresh, nourishing produce.

The most recent Census of Agriculture revealed that Durham's farming population is aging, forecasting increasing transitions in farm ownership. While there is increased interest by young people in farming, the cost of land in Durham is a barrier.

This time of transitions creates both challenges and opportunities for our County, which has an enviable access to urban markets throughout the Triangle and beyond. The economic potential for farming in Durham is immense. All County residents are united in one thing: we must eat to live. As you read this Plan, I ask that you imagine how many jobs and dollars we could generate for our County by spending just ten percent of our food dollars on food produced on Durham farms.



## **ACKNOWLEDGMENTS**

The author wishes to thank the many farmers, citizens, and employees of Durham County who gave freely of their time and opinions. Jennifer Brooks, Lisa Marochak, and Eddie Culberson of the Soil and Water Conservation District were very generous in arranging logistics, contacting farmers and landowners, and facilitating contractual arrangements with the County. Kathryn Spann of the Farmland Protection Advisory Board and Talmage Layton of the Soil and Water Conservation District and Farm Bureau Boards provided valuable ideas on the course of Durham County farming. Jane Korest, Wendy Seddon, and Greg Schuster of the Open Space and Real Estate Division were very helpful in obtaining maps, data, and perspective on the County's farmland protection efforts. Julia Mullen and Helen Youngblood of the City-County Planning Department gave freely of their time and thoughts.

Portions of the Farmland Preservation Section adapted the text of American Farmland Trust's *Planning for an Agricultural Future: A Guide for Farmers and Local Governments*. The full text of this document can be viewed at:

[http://farmlandinfo.org/documents/31721/FINAL\\_NCP4Ag\\_AFT.pdf](http://farmlandinfo.org/documents/31721/FINAL_NCP4Ag_AFT.pdf)

Tony Kleese of Earthwise Company conducted interviews and provided text for several of the sidebars.



## **EXECUTIVE SUMMARY**

### **Introduction**

Durham County agriculture has undergone a transformation over the past decade with the emergence of a diverse small farm sector focused on local marketing opportunities. New opportunities are emerging for small farms to sell food and services in the local marketplace, yet agricultural operations require a stable land base to innovate and make new investments. The County is seeking to promote its farms and protect its agricultural resources in the face of dramatic changes in the economy and increasing growth pressure from residential development in the Piedmont region.

In 2007, 242 farmers were tending 26,150 acres. Half of these farms produce under \$2500 worth of sales per year. Nursery and greenhouse production is the most important farm commodity, at \$4.5 million, constituting approximately two-thirds of all County agricultural sales receipts. Cattle are second at \$1.1 million, with tobacco third at \$839,000. Forage and hay land dominates the landscape, with 2200 acres in production, while wheat, corn, and soybeans cover 2000 acres, and tobacco another 275 acres.

Farms provide economic, environmental, cultural, fiscal, and aesthetic benefits for all of its citizens. As part of a proactive effort to support farming, forestry, and land conservation, the Farmland Protection Advisory Board and Soil and Water Conservation District supported development of this Agricultural Development and Farmland Preservation Plan, which is intended to coordinate future efforts to sustain local agriculture. The County received a grant from the NC Department of Agriculture's Agricultural Development and Farmland Preservation Trust Fund (ADFPTF), which they used to hire consultant Gerry Cohn, former Southeast Director with American Farmland Trust, to help develop the plan.

### **Methodology**

- Coordinated map and baseline data collection on land use, agricultural production, and natural resource stewardship;
- Reviewed current land use plans, ordinances, and regulations to identify any potential conflicts with farming;
- Conducted 30 interviews with County officials and leaders of the farm, tourism and business sectors;
- Determined infrastructure needs and marketing opportunities for increased profitability and viability of the agricultural community;
- Held three public outreach meetings to garner input from rural landowners and the general public;
- Developed a local agricultural development and farmland preservation plan, quantify baseline data, identify threats and opportunities, organize recommendations, and outline action steps, priorities, and an implementation schedule for the project;
- Incorporated feedback to refine the plan; present final plan to Commissioners for adoption as official County policy.



## Findings

- **Changing Landscape** – Durham’s agriculture is in the midst of significant transformation from tobacco, field crops, and beef cattle to specialty items like nursery plants, produce, and horses. The County needs a critical mass of production to build infrastructure.
- **Burgeoning Market** – The market for locally grown items continues to expand, with a hugely successful downtown farmers market and high-end restaurants offering excellent opportunities for entrepreneurial growers. Durham just needs more farmers.
- **Urban Agriculture** – Community gardening projects, the new “in-town chicken rules,” and ties to youth job skills development indicate a growing interest in small-scale farming within the city setting.
- **The Next Generation** – Not many kids seem to be taking over their parents’ farming operations. The Triangle area is attracting and training prospective new growers, but not many of them have started farming in Durham.
- **Limited Local Educational Resources** – Durham has less Extension resources available for commercial agriculture than surrounding counties, and with the recent retirement of the regional livestock agent from Orange County, it will be increasingly difficult for farmers to get local ground-level support. The County should increase their investment in technical assistance.
- **Regional Cooperation is Essential** – The Triangle area is blessed with a number of unique educational and training resources supporting local farms. This presents great opportunities, but also creates added competition in the local marketplace.
- **It’s Not Too Late** – Although land values are rising, Durham hasn’t seen the runaway development pressure that has destroyed the potential of new farming operations elsewhere in the Southeast. The Urban Growth Boundary assures that, without public water and sewer services in the northern and eastern parts of the County, development will be limited and agriculture will continue to be a desirable activity for many landowners.
- **Strong Government Support for Farmland Preservation** – Durham has a unique collaboration between the Soil and Water Conservation District, Open Space and Real Estate Division, City-County Planning, the Farmland Protection Advisory Board, County Manager, and the County Commissioners to protect farmland. They have succeeded in communicating with landowners on farmland preservation options and leveraging outside funds to match local dollars for the purchase of agricultural conservation easements.

## Recommendations

Recommendations are focused on these key findings, organized around specific actions for the following groups:

- County Government
- Farmland Protection Advisory Board
- Private Sector
- Farmers
- Farming Communities



## **I. INTRODUCTION**

Durham County possesses a strong farming tradition and a viable agricultural economy. Long the center of the state's tobacco industry, Durham agriculture has undergone a transformation over the past decade with the emergence of a diverse small farm sector focused on local marketing opportunities. New opportunities are emerging for small farms to sell food and services in the local marketplace, yet agricultural operations require a stable land base to innovate and make new investments. The County is seeking to promote its farms and protect its agricultural resources in the face of dramatic changes in the farm economy and increasing growth pressure from residential development in the Piedmont region.

With an increasingly global marketplace and a plentiful year-round supply of food, some Durham residents may feel that local agriculture isn't as important as it once was. However, local farms today provide much more than food to their communities. Well-managed farms bring a range of benefits that all citizens can enjoy at no cost:

- **Economic:** Agriculture contributes to the local economy directly through sales, job creation, support services and businesses, and also by providing entrepreneurial opportunities in secondary markets such as food processing and catering. Farming and forestry are significant economic activities in Durham. Direct cash receipts on farms totaled \$7.3 million in 2007.<sup>1</sup> Nearby, agricultural receipts were \$28 million in Orange County, \$27 million in Granville, \$55 million in Wake, and \$143 million in Chatham County. According to NC State University, Durham agriculture provides \$18.5 million in value-added sales and contributes a total of \$511 million in total value-added economic activity to the County's economy.<sup>2</sup> The forestry sector adds an additional \$3.7 million in sales and \$42 million in total economic activity.
- **Environmental:** Working farms and forests supply important environmental amenities, protecting wetlands and watersheds, providing food and cover for wildlife, helping to control flooding, and maintaining air quality. Durham's farmers manage 26,150 acres of land, about one quarter of the undeveloped land base in the County. Privately owned forests constitute another 40,050 acres of land. Thus, private working lands altogether constitute a third of the total County land base. Another 16,000 forested acres are in public ownership. All citizens depend on the owners of farm and forest lands to be responsible stewards of our natural resources.

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<sup>1</sup> <http://www.ncagr.gov/stats/2008AgStat/Page113.pdf>

<sup>2</sup> <http://www.ces.ncsu.edu/depts/agecon/counties/durham.pdf>



- **Rural Heritage:** Agriculture is a major part of our cultural heritage, with farm families anchoring rural communities and providing an important piece of Durham's unique historical character. Tobacco provided a major source of income in both the production and manufacturing sectors, and the many beautiful historic barns dotting the countryside are a reminder of this past. Today, farm families are cornerstones to rural churches, fire departments, schools, and other community institutions.
- **Open Space:** Farms and forests provide wildlife habitat, green space and beautiful views, important for scenic beauty for everyone and attracting new residents, business relocations, and tourist dollars from across the country and world.<sup>3</sup> Privately owned and managed farms are an important and cost-effective element of the County's open space strategy.
- **Tax Savings:** Privately owned working lands provide fiscal benefits, helping keep property taxes low due to their minimal need of public services. **Cost of Community Services (COCS)** studies by NC State University in five North Carolina counties (including Alamance, Chatham, and Wake) have shown that farm, forest and open lands receive an average of \$0.63 in services for every dollar of revenue they provide, while residential land uses require \$1.31 in services for each dollar paid in property taxes.<sup>4</sup> Thus, residential properties actually cost counties more in needed services than they provide in revenue, while farm and forestland owners pay more than their fair share of taxes. There is a simple explanation for this surprising result: *coms don't dial 911*. Farms don't require much from their counties, while new housing developments spread out across the countryside require a great deal of public funds for new infrastructure and services.

Findings of COCS studies have important implications for policymakers charting a future course for their communities. They suggest not that communities should pursue a single type of land use for fiscal health, but that they should consider balancing various community goals that include a range of housing and employment options, as well as open space and working lands. With good planning, these goals can be balanced for the benefit of all citizens.

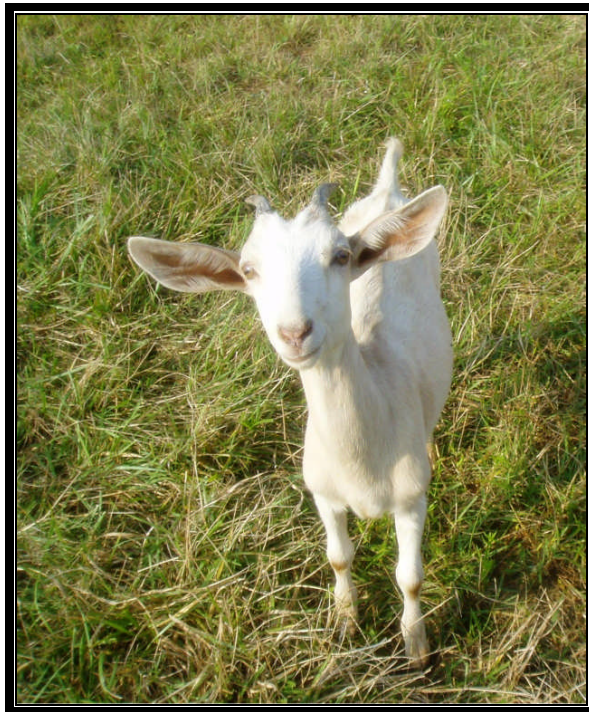
- **Local Food:** Durham's farms are increasingly valued as a source of fresh, safe and healthy food. The growth of farmers' markets, community supported agriculture, and direct marketing to restaurants and universities points to strong consumer demand for locally grown fruits, vegetables, wines, meats, and dairy products. With increasingly volatile fuel markets and global instability, Durham's farms provide important food security to local residents.

<sup>3</sup> <http://www.landfortomorrow.org/stuff/contentmgr/files/0b60b10902f50b512da3f4e7aed75a4d/miscdocs/AppAD.pdf>, p. A4.

<sup>4</sup> <http://www.cals.ncsu.edu/wq/lpn/cost.html>



Aware of these benefits, and as part of a proactive effort to support farming, forestry, and land conservation, the Farmland Protection Advisory Board and Soil and Water Conservation District supported development of this Agricultural Development and Farmland Preservation Plan, which is intended to coordinate future efforts to maximize the productivity of local agriculture. The County received a grant from the NC Department of Agriculture and Consumer Services' Agricultural Development and Farmland Preservation Trust Fund (ADFPTF), which they used to hire consultant Gerry Cohn, former Southeast Director with American Farmland Trust, to help develop the plan. Completion of this plan will also increase the ranking score and lower cost-share requirements for future applications to the ADFPTF.





## **2. METHODOLOGY**

An effective planning process can help the County maximize the productivity of its farming infrastructure and strategically conserve farmland by:

- Gathering data and soliciting community input to understand current trends, challenges and opportunities;
- Creating a unique and specific local agricultural development and farmland preservation plan;
- Advising Durham County political and business leaders on land use planning and economic development policy initiatives that can help support the success of local farms; and
- Developing specific milestones and target dates for implementing the plan's recommendations, thus assuring accountability and successful outcomes.

To achieve these objectives, the consultant hired by the County to develop this plan took the following steps, beginning in January 2009:

- Coordinated map and baseline data collection on land use, agricultural production, and natural resource stewardship;
- Reviewed current land use plans, ordinances, and regulations to identify any potential conflicts with farming;
- Conducted 30 interviews with County officials and leaders of the farm, tourism and business sectors;
- Determined infrastructure needs and marketing opportunities for increased profitability and long-term viability of the agricultural community;
- Held three public outreach meetings to garner input from rural landowners and the general public on needs for agricultural profitability and the continued preservation of farmland (see Appendix 4 for list of interviews and outreach activities);
- Developed a local agricultural development and farmland preservation plan, quantify baseline data, identified threats and opportunities, organized recommendations, and outlined action steps, priorities, and an implementation schedule for the project;
- Incorporated feedback from partners, local leaders, and stakeholders to revise and refine the plan;
- Presented final plan to Commissioners for adoption as official County policy.





### 3. **KEY ISSUES**

Preliminary discussions with the Farmland Protection Advisory Board indicated that they saw the following key issues in Durham County agriculture:

- **Changing Landscape** – Durham’s agriculture is in the midst of significant transformation from tobacco, field crops, and beef cattle to specialty items like nursery plants, produce, and horses.
- **Burgeoning Market** – The market for locally grown items continues to expand, with a hugely successful downtown farmers market and high-end restaurants offering excellent opportunities for entrepreneurial growers.
- **Urban Agriculture** – Community gardening projects, the new beekeeping and in-town chicken rules, and ties to youth job skills development indicate a growing interest in small-scale farming within the city setting.
- **The Next Generation** – Not many young people seem to be taking over their parents’ farming operations. The Triangle area is attracting and training prospective new growers, but very few of them have started farming in Durham, even with rural land prices comparable to nearby Chatham and Orange Counties. Only 9 of Durham’s principal operators were on their farm 2 years or less according to the 2007 Census of Agriculture, while Chatham County had 39 newcomers and Orange 31.<sup>5</sup>
- **Limited Local Educational Resources** – Durham has fewer Extension resources available for commercial agriculture than surrounding counties, and with the recent retirement of the regional livestock agent from Orange County, it will be increasingly difficult for farmers to get local ground-level support. Orange County has a part-time Agricultural Economic Development Coordinator, while Chatham County Extension has an agent specializing in small-scale sustainable agriculture.<sup>6</sup> These individuals have been very helpful in helping new and transitioning farmers take advantage of new production and marketing opportunities.
- **Regional Cooperation is Essential** – The Triangle area is blessed with a number of unique educational and training resources supporting local farms. This presents great opportunities, but also creates added competition in the local marketplace.
- **It’s Not Too Late** – Although land values are rising, Durham hasn’t seen the runaway development pressure that has destroyed the potential of new farming operations

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<sup>5</sup> [http://www.agcensus.usda.gov/Publications/2007/Full\\_Report/Volume\\_1,\\_Chapter\\_2\\_County\\_Level/North\\_Carolina/st37\\_2\\_046\\_046.pdf](http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1,_Chapter_2_County_Level/North_Carolina/st37_2_046_046.pdf)

<sup>6</sup> <http://chatham.ces.ncsu.edu/growingsmallfarms/>



elsewhere in the Southeast. The Urban Growth Boundary assures that, without public water and sewer services in the northern and eastern parts of the County, development will be limited and agriculture will continue to be a desirable activity for many landowners.

- **Strong Government Support for Farmland Preservation** – Durham has a unique collaboration between the Soil and Water Conservation District, Open Space and Real Estate Division, City-County Planning, the Farmland Protection Advisory Board, County Manager, and the County Commissioners to protect farmland. They have succeeded in communicating with landowners on farmland preservation options and leveraging significant state and federal funds to match local dollars for the purchase of agricultural conservation easements.



## 4. DURHAM COUNTY PROFILE

### a. History

Durham's history is firmly rooted in agriculture, beginning with the opening of the first tobacco factory and railroad station in 1854. Textile mills began to develop along the railroad lines, and a range of services and new residents soon followed. Trinity College moved to Durham in 1892 and was renamed Duke University in 1924.

In 1910, North Carolina Central University was founded as the nation's first publicly supported liberal arts college for African-Americans. The city is home to the country's oldest African-American owned bank and insurance company. The Parrish Street neighborhood became known as the *Black Wall Street*.

Agriculture remains a major part of the County's cultural heritage, with farm families anchoring rural communities and providing an important piece of Durham County's unique historical character. Ten farms in Durham County participate in the North Carolina Century Farm Program (see box below). To be eligible, a farm must have had continuous ownership by a family for 100 years or more.

#### **Durham County Century Farms**

Willis Thomas Carpenter, Edna Carpenter  
Baker  
Mary M. Husketh Coley  
James Emerson Trust  
Nancy Herndon  
Edna S. Page, Beulah S. Simko  
Pope Farm  
Frances A. Terry  
Roger Carrington Tilley  
Leland Wheeler, Mary Wheeler, Stephen  
Wheeler  
William Wheeler, Iris Wheeler

### b. Population

From 2000-2008, the population of Durham County rose 17 percent to 262,715.<sup>7</sup> According to 2007 U.S. Census Bureau data, 56% of residents are white, 38% are black, 12% are Hispanic, and 4% are Asian. 83% are high school graduates and 40% have completed college, almost double the state average. The median income of the 89,015 households is \$47,885; 16% of the population lives below the poverty line.

According to long-range growth estimates from the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization, Durham County's population is expected to grow 45% to 355,000 from 2005-2035.<sup>8</sup> High-growth areas will likely be Treyburn and its southern border, East Durham between Hwy 98 and US 70, and the southern part of the County near SouthPoint Mall, the airport, and Hwy 54/I-40.



<sup>7</sup> <http://quickfacts.census.gov/qfd/states/37/37063.html>

<sup>8</sup> <http://www.dchcmo.org/dmdocuments/SEDDataPPSummaryRev.pdf>



**c. Municipalities**

The city of Durham, the fourth largest city in North Carolina at 217,847 people, is the only incorporated municipality in the County. Downtown Durham is currently undergoing a development renaissance, with the creation of the American Tobacco campus, Durham Central Park, the Farmers Market, and lively restaurants and arts organizations. Ninth Street, Brightleaf Square, and Duke University's East and West Campuses remain as traditional centers of commercial and social activity. Vibrant neighborhood associations ensure an engaged citizenry with a strong sense of community. In June 2009, Durham was named one of the 10 best places to live in the nation by *US News and World Report*.

With the development of downtown arts districts, there is an opportunity to connect artists with agriculture to highlight the unique rural character of Durham's countryside. This could be done through a farmer-artist exchange<sup>9</sup> or weekend art events on local farms, such as Chatham Arts Council's Potluck in a Pasture.<sup>10</sup>

**d. Employment**

Employment is predicted to grow 63% from 2005-2035, with the annual employment growth rate (1.6%) expected to exceed the annual population growth rate (1.2%).

Durham has several major prominent employers that appear relatively recession-proof and destined to remain cornerstones of the economy: Duke University, Duke Medical Center, IBM, and Glaxo Smith Kline. The Research Triangle Park is a major international center for technology and health care research and development, employing more than 40,000 people.

According to American Chamber of Commerce Researchers Association data, the cost of living in Durham is 5% below the national average.

**e. Land and Climate**

Residents populate Durham's 290 square miles at the rate of 770 people per square mile.

Durham is blessed with moderate climate and rainfall levels. Average summer temperatures range from 66 to 87 degrees Fahrenheit, and winter temperatures from 51 to 31. Durham's adequate annual rainfall of 41 inches ensures that a wide variety of agricultural products can be grown over the course of the year, though the summer droughts of the past two years make irrigation an important investment for most crops.

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<sup>9</sup> <http://www.farmland.org/news/pressreleases/2006/03132006.asp>

<sup>10</sup> <http://www.chathamarts.org/news/potluck5-09.html>



**f. Infrastructure**

Interstate 85 bisects the County, providing a major route from Atlanta, Charlotte, and Greensboro up through Washington DC and the entire eastern seaboard. Interstate 40 slices through the southern part, constituting a major commuting route to the Research Triangle Park and Raleigh. Highway 147, the Durham Freeway, runs through downtown Durham and connects the two interstate highways. 15-501 is the primary north-south route, making it very important for the movement of agricultural products from the primary farming region in the north into markets in the city of Durham; Hwy 98 plays a similar role into the Falls District in the east.

The city of Durham provides water services to 80% of the County's residents, as well as the bulk of all sewer services. The County also provides sewer services to southern parts of the County. All water and sewer infrastructure services end at the County's *urban growth boundary*, ensuring that development will remain limited beyond that line.

Several unincorporated communities also play important roles in Durham County's landscape: Bahama, Bethesda, Genlee, Gorman, Nelson, and Rougemont. Bahama and Rougemont, in the northern part of the County, are particularly active farming areas.

**g. Natural Resources**

**i. Soils**

Durham County consists of 188,928 square acres located in the Piedmont Physiographic Province with elevations of 275 to 700 feet above sea level. The northern third of the County lies in the Carolina Slate Belt with the southern two-thirds in the Triassic Basin. There are pockets of soils in the central and southern parts of the County that are derived from injected intrusions of diabase rocks.

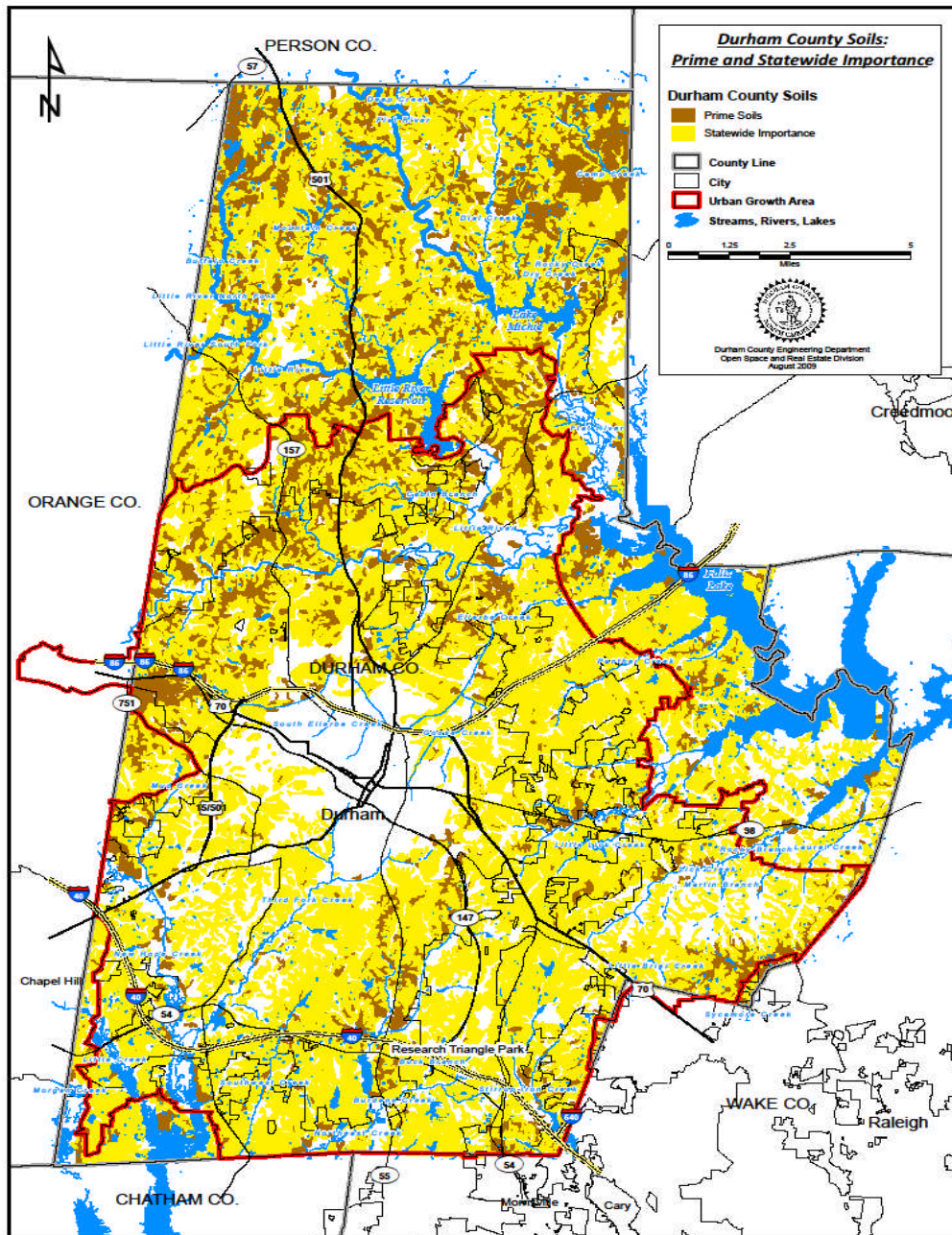
The Carolina Slate Belt soils are derived from heated and deformed volcanic sedimentary rocks formed about 550-650 million years ago. In Durham County this has resulted in residual areas of well-drained mineral soils that are suited for agricultural production. These soils lie north of a line that starts where Interstate 85 crosses the Orange/Durham County line to just south of Lake Michie on the eastern line, covering the Little River, Flat River, and Eno Voluntary Agricultural Districts.

The Triassic Basin formed about 200-190 million years ago and filled in with sedimentary rocks and silt from the eroding surrounding land. The resulting soils make good bricks and tile, but they are difficult for agricultural use because of their narrow range of suitable moisture conditions (the tendency to stay saturated and then to dry to a dense, hard structure). There are pockets of good soil in this area (Falls and Cape Fear Voluntary Agricultural Districts) that can be productive.





The topography is dominantly rolling with broad gentle ridges and some flood plain. The soils are generally acidic and leached due to our humid and wet climate and the poor agricultural practices of the past. The climate gives local farmers the advantage of a 200-day frost-free growing season from mid-April to late-October, which can be expanded to year-round production with season-extension practices.



## ii. Water

The County has 8 square miles of water, primarily in Lake Michie, the Little River Reservoir, and Falls Lake. These water bodies require significant measures to protect quality and quantity for the growing population. This is considered a mixed blessing to some farm families that had land condemned for reservoirs, or for others that have seen strict land use regulations applied to their land. Protection of the County's water supplies has been a driving force for land protection, justifying taxpayer expenditures for both public acquisition and the purchase of conservation easements. Even with the easing of the severe drought of the past two years, water quality continues to top the list of general public concerns about the environment. Future agricultural land protection efforts should continue to emphasize the value and cost-effectiveness of preserving farms to provide water recharge, filtering, and floodplain utilization.



**Lake Michie**

Two-thirds of Durham County is located in the Upper Neuse River Watershed, with three main tributaries: the Flat, the Little, and the Eno Rivers. The southern third of the County falls within the Cape Fear River Basin.

Lake Michie in the Flat River Voluntary Agricultural District is a primary source of drinking water for Durham. Fed primarily by the Flat River, Lake Michie is also an important recreational resource, with some of the best largemouth bass fishing in the Piedmont. The Flat River Open Space Plan will help to guide future land protection efforts in this region once it is completed by the Planning Department.

The Little River Corridor cuts across the northern third of the County to the Little River Reservoir; it constitutes the other primary source of drinking water for the city of Durham. There is little public or permanently protected open space upstream of the reservoir except the buffer lands surrounding the reservoir itself. Downstream of the reservoir, most of the river and surrounding floodplain have been publicly acquired as part of the Falls Reservoir. Protection of this Little River Corridor has long been a priority of the County, with the County adopting an Open Space Plan in 2001.

The Eno River cuts across the central belt of the County, constituting important open space and wildlife corridors. The Eno River State Park is an important public recreation area for citizens of Orange and Durham Counties. The Eno eventually joins the Flat and Little Rivers to become the Neuse, emptying into Falls Lake.

Falls Lake includes land in Durham, Granville, and Wake Counties. Falls Lake is a primary drinking water reservoir for Raleigh and other communities to the east. This eastern end of Durham County faces the greatest development pressure. Preserving well-managed farmland in Durham County can play an important role in protecting water quality throughout the region.



## 5. DURHAM COUNTY AGRICULTURE

### a. Historical Overview

Durham County has a long rich farming history. From its beginning, Durham's farms were small and diversified, targeting the local market and reflecting their location near a population center. With land values at a premium and acreage limited, Durham was the classic home of the family farm, with vegetables, chickens, pigs, and a milk cow to assure that, even in lean years, the family could always feed themselves. Durham County has long been an area of small part-time farmers, in which off-farm income opportunities were very important in maintaining the agricultural landscape.

From Washington Duke to Bull Durham to Trinity College and the Duke University Medical Center, tobacco production and manufacturing played a central role in the development of the area. The federal tobacco program, which was instituted in 1938 as part of a New Deal effort to stabilize farm income, limited acreage grown based on market demand, with a quota restricting acreage proportionately by County and down to the individual farmer. This control on supply maintained a stable price, allowing farmers to raise their families and put kids through school on relatively small acreage, further supporting the stability of small farms. Tobacco quotas became important financial assets, passed down through the generations, and bought and sold like a stock or real estate.

Historically, tobacco was always where farm families made their cash. Over the years, as farmers grew older and retired, they would lease out their tobacco quota to a farming neighbor. This became an important determinant of land tenure relationships, as a family might agree to lease their 5 acres of tobacco quota to a neighboring farmer, as long as the grower would also tend their additional 100 acres in a rotation of corn, soybeans, or wheat. When the tobacco harvest time came, school would let out to provide additional labor, everyone would gather for the opening of the tobacco auction market, and the whole community shared in the trials and tribulations of the tobacco crop. Even as Durham grew and there were many lower-cost locations for production, the County was able to maintain its place in the tobacco economy due to the supply control program.



**Top to bottom: 1971 hay farming on Roxboro Rd in front of old Liggett-Myers Administrative building; 1958 tobacco; 1958 James Barrard inspecting sod off of Rose of Sharon Road**





With changes in the world production landscape and marketplace, increased attention to public health impacts, and growing economic pressures on growers, the federal government ended the tobacco program in 2004, buying out growers and quota owners, opening tobacco production up to the free market, and thus tipping NC tobacco production away from “expensive” Durham County and towards lower-cost landscapes down east. Not only did this largely eliminate the County’s most valuable agricultural product, it also overturned long-standing relationships between landowner and farmers. A common story was of the little widow woman whose only income was Social Security and tobacco quota rental and who now no longer had that annual incentive to keep that land in agricultural use. As land is passed down through families and that stable rental relationship fades away, many Durham farms are threatened by subdivision pressures, absentee ownership, and a lack of demand for large acreage. Not only did tobacco bring in solid income, but it also supported the continuing production of other field crops as part of a healthy crop rotation.



Even as tobacco has declined dramatically on the landscape, new opportunities are emerging for farms to play an important role in local identity, evidenced by *Bon Appetit* magazine’s recent designation of Durham-Chapel Hill as America’s “foodiest” small town. With today’s rising interest in locally grown foods, the growth of farmers markets, and the burgeoning restaurant community in Durham, opportunities abound for small farmers growing fruits, vegetables, and ornamental items for direct market sales. A much bigger challenge remains for midsize acreage farms that traditionally supported tobacco, field crop, and livestock production. All agriculture depends on these operations, which constitute the bulk of remaining farmland in the County, to maintain a critical mass of demand to support infrastructure such as input dealers, repair facilities, technical and financial expertise, and leadership opportunities for the next generation. These midsize farms also play a crucial role in providing open space, protecting soil and water quality, and maintaining rural character and institutions that benefit all the County’s citizens. As land values rise and farms are divided by new roads, sewer lines, and housing developments, the pressure continues to intensify for large acreage farmers trying to survive in the high-dollar Triangle region. Moving farm equipment along increasingly busy rural roads becomes more difficult, dangerous, and discouraging to those trying to maintain the legacy of farming in the County.

Durham County is not unique in facing this challenge for mid-sized farms. Nationwide, government data show continued growth in large and small farms, while those in the middle, which typically constitute the bulk of what the public considers to be family farms, are disappearing at a rapid rate.<sup>11</sup> Local land use and economic development policy should pay particular attention to the needs of this endangered demographic.

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<sup>11</sup> <http://www.agofthemiddle.org/>  
Public Draft 12/1/2009



## **b. Black Farming History**

African-Americans have an illustrious history developing the farm sector of Durham County. The stories of enslaved families and their contributions to agriculture and the building trades are told at Historic Stagville Plantation. Freed slaves initially took on a major role in agricultural production, but the role of black farmers diminished dramatically over the next century. In 1910, 32% of Durham's farmers were black. By 1950, this figure had dropped to 28%. At the most recent Census of Agriculture in 2007, only 10 black farmers responded (representing 4% of the County's total responding farmers), tending 882 acres, which is 3% of the agricultural land base.

Black land ownership and farmers are declining dramatically across the country.<sup>12</sup> However, Durham has been a leader in seeking to reverse the trend and to find opportunities for a new generation of black farmers. The Land Loss Prevention Project is one of the country's leading advocates helping African-Americans retain their land.<sup>13</sup> The Black Family Land Trust, also based in Durham, is the nation's only land trust combining rural development and conservation-based tools to address the dramatic disappearance of land ownership and farming among African-American families.<sup>14</sup>

The Durham Open Space and Real Estate Division is currently working with the Carrington family to help them protect their historic farm in the northeastern corner of the County.



**Glenn family homeplace on Hampton Road, one of the oldest African-American farm homesteads in Durham County**



**Mr. Carrington, sharing family farm history with County leaders and citizens during the 2009 Durham County Farmland Tour.**

<sup>12</sup> <http://www.federationsoutherncoop.com/landloss.htm>

<sup>13</sup> <http://landloss.org/>

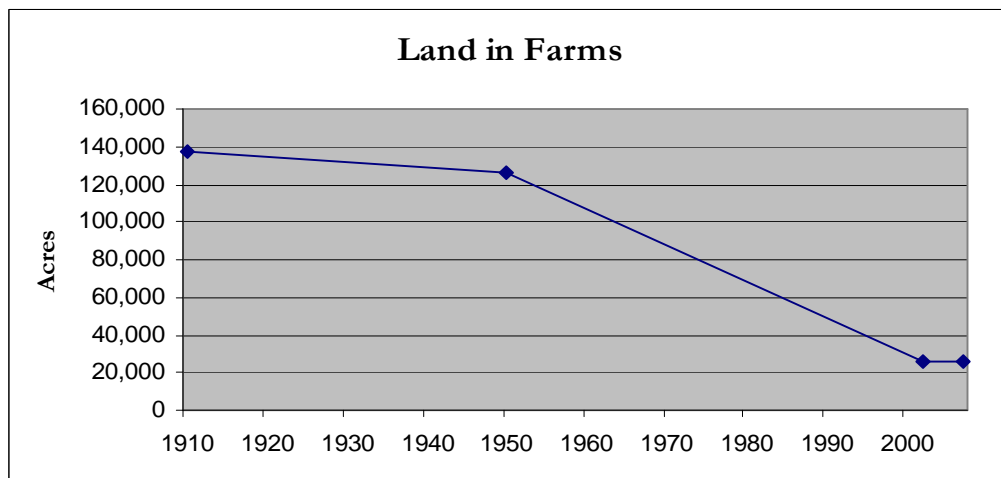
<sup>14</sup> <http://www.bflt.org/>



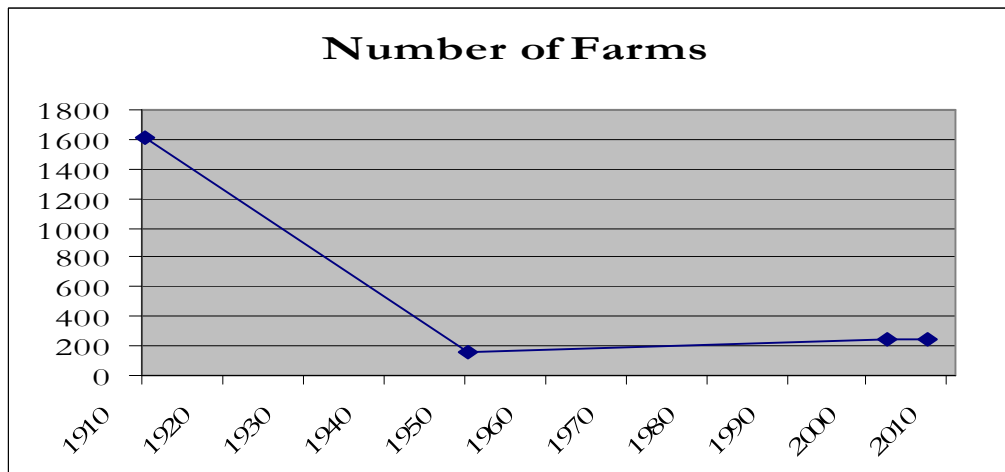
### c. Long-term changes

This study examined Census of Agriculture data from 1910, 1960, and 2007 to understand long-term changes in the Durham farm landscape. The US Department of Agriculture now conducts this census every five years, offering a snapshot of land use, production, and economic impact of the local agricultural sector.

The following graph indicates how the land in farms declined dramatically over the past 50 years, but has stabilized during the past decade. This indicates the relative stability of the agricultural land base in recent years, even while the composition of agricultural sales continues to evolve.

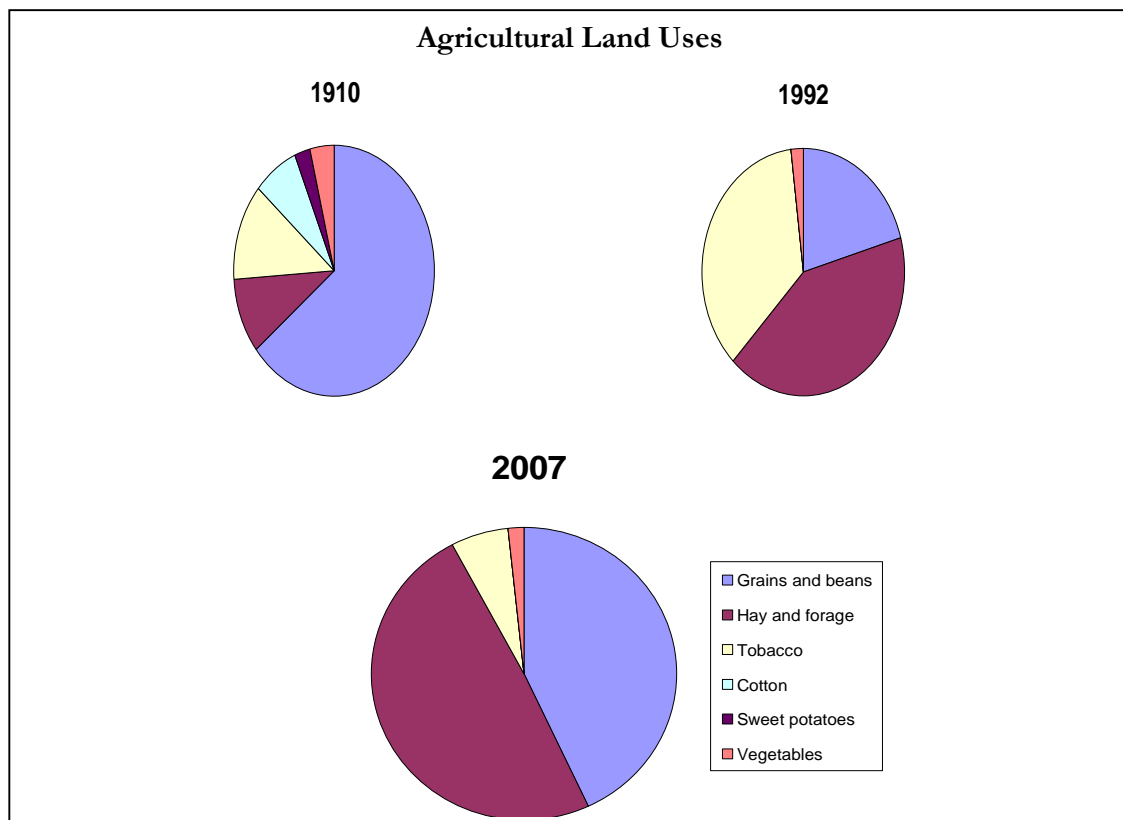


The number of farms, on the other hand, took a big dip in the first half of the 20<sup>th</sup> century, yet has shown a slight recovery over the past 50 years. These data are consistent with nationwide trends seeing a growth in small farm numbers.



Around the turn of the last century, 140,000 acres (74% of the County land base) were in farm use, with 56% in woodland, 42% in crops, and only 2% in pasture. In 1910, grains and beans dwarfed all other crops in terms of acreage, with meat and grains being the dominant commodities in terms of sales for these 1616 farmers. Tobacco, hay, cotton, and sweet potatoes were also important parts of the farm landscape and economy.

The accompanying charts demonstrate the changing use of agricultural land over the course of the past century. By 2007, 242 farmers were tending 26,150 acres, with 32% in cropland, 17% in pasture, 42% woodland, and the rest in other uses. Half of these farms produce under \$2500 worth of sales per year. Nursery and greenhouse production had become the most important farm commodity, at \$4.5 million, constituting approximately two-thirds of all County agricultural sales receipts. Cattle are second at \$1.1 million, with tobacco third at \$839,000. Forage and hay land dominates the landscape, with 2200 acres in production, while grains and beans cover 2000 acres, and tobacco another 275 acres (less than one-tenth of what was grown in 1910).<sup>15</sup>

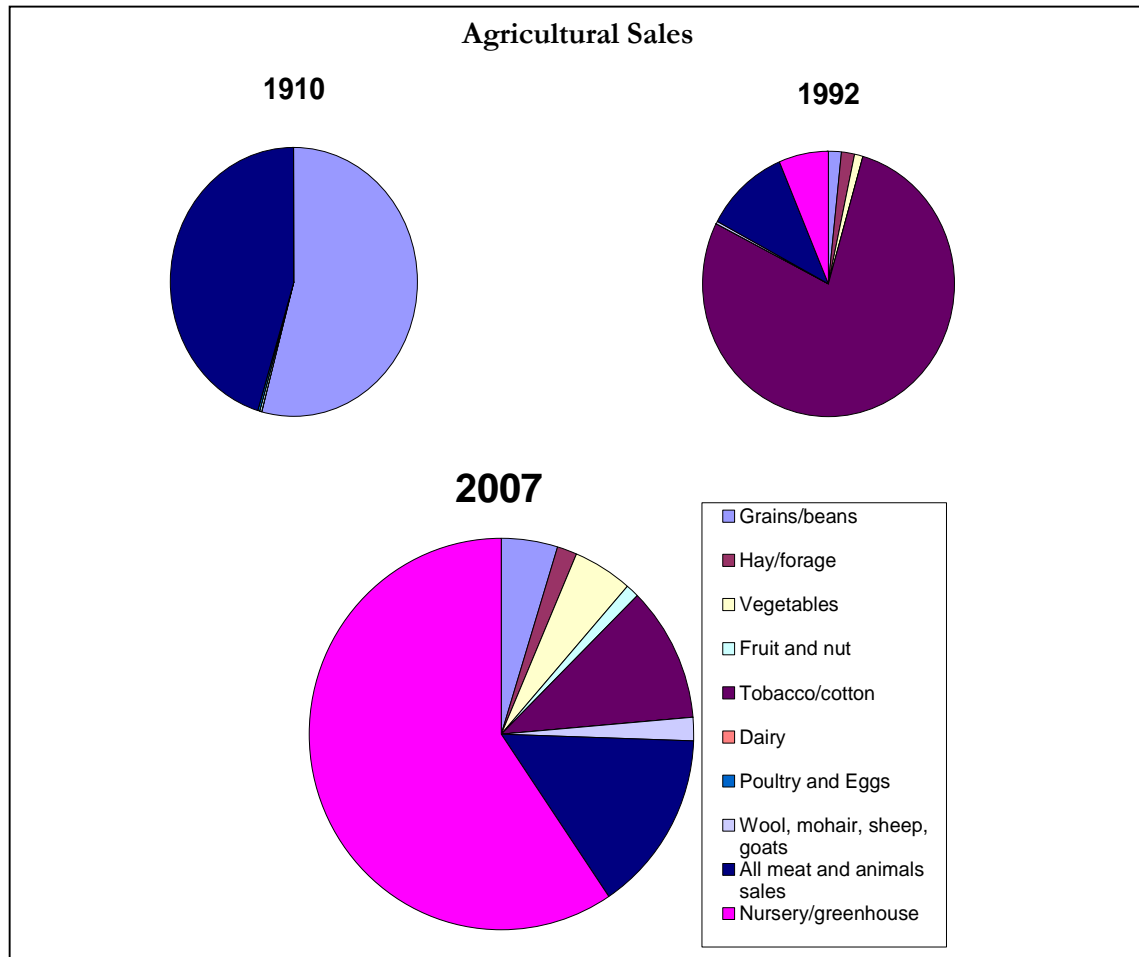


<sup>15</sup>

[http://www.agcensus.usda.gov/Publications/2007/Full\\_Report/Volume\\_1\\_Chapter\\_2\\_County\\_Level/North\\_Carolina/index.asp](http://www.agcensus.usda.gov/Publications/2007/Full_Report/Volume_1_Chapter_2_County_Level/North_Carolina/index.asp)



The changes in the agricultural economy are illustrated by the charts below. It is interesting to note that, over the years, the dominant land use generally doesn't correspond with the dominant economic activity in agriculture. This shows that smaller agricultural parcels can be economically vibrant contributors to our farming economy.



Relative to neighboring counties, Durham agricultural land rental values have remained moderate in the face of rapid growth in the Triangle Region. The 2008 Cash Rents Values study from the North Carolina Department of Agriculture<sup>16</sup> finds that Durham's rental rates for farmland average \$43.70 for high-productivity land, second lowest in the 13-County statistical district. On the other hand, rental values average \$26.00 for low-productivity land, the highest in the district in this category. These data indicate that land is available for rent at an affordable price for new and expanding agricultural enterprises, although prospective farmers must be selective to find highly productive soils. Additionally, the rental market is

<sup>16</sup> <http://www.ncagr.gov/stats/economic/2008%20Cash%20Rent%20Values.pdf>  
Public Draft 12/1/2009



driven by lifestyle choices rather than the commercial agricultural sector, reflecting the lack of large uninterrupted stretches of high productivity soils in the County.

A unique aspect of Durham's agriculture over the years has been the close relationship between farm and city, with an active urban agricultural sector. Even back in 1910, Census of Agriculture figures show a plethora of domestic livestock not living on farms, as home-based food production and animal-based power were a central part of the non-farmer's life. These included 1000 cattle, 850 swine, 226 mules, and 840 horses. Today, the city of Durham boasts active inner-city agriculture, with a wide range of community gardening projects and a new urban agriculture ordinance that allows city-dwellers to have their own hens and bees in limited numbers.

The next section reviews the primary issues and challenges that various sectors of commercial Durham agriculture are facing. It reflects the multiple economic, production, and demographic elements that impact future farm profitability.

#### **d. Crops and Livestock**

##### **i. Tobacco**

Although Durham was an important center of the tobacco manufacturing and marketing industry for much of the last century (the Liggett-Myers plant closed in 1999), it never had the most productive soils for growing tobacco. The buyout of the quota program was a welcome change to many of the smaller tobacco operations in the County, as soils here are not adequate to produce a bumper crop most years. All tobacco is now grown under contract with a cigarette manufacturer. Only 12 tobacco farms remained in the County in 2007, growing on 275 acres, with 200 of these acres under production by a single farmer. The contracting companies provide technical assistance based on their preferred specifications, and the few remaining farms have their system down with no particular needs from the County. There are no remaining tobacco warehouses.



**Checking tobacco leaf curing at Ellis Farms**

One appealing aspect of tobacco production under the federal quota program was the autonomy and independence it gave the grower. Leaf was sold through an auction system, with multiple buyers bidding on each pile of tobacco based on quality. If no bidders offered a minimum price, the tobacco would be purchased by a farmer-owned cooperative for storage and sale to another buyer later. Individual farmers felt they had bargaining power and would be rewarded for their attention to detail





in producing a quality crop. The current system of contract production with a single buyer leaves farmers lacking bargaining leverage and vulnerable to the fortunes and whims of a large corporate entity. This follows the model of poultry and pork production, in which virtually all commercial sales require a contract with an integrator who sets specifications for all aspects of production and marketing. After a century of being *the golden leaf*, tobacco today is just another crop.

## **ii. Grains and beans**

Ten grain and bean operations remain in Durham County. This row crop production requires large blocks of land and significant capital investment in harvest equipment, as ease of storage and transportation and the competitive world marketplace keep margins per acre low. With relatively expensive land and small farms, Durham farmers don't have a comparative advantage in this sector. Most farmers use corn, beans, and wheat as rotation crops to minimize disease and pest pressures between higher-value crops like tobacco and vegetables.

Beyond the challenges of the volatile world marketplace, the remaining field crop growers mention traffic as their primary concern. As fewer field crop growers are renting a larger number of farms, a significant challenge is moving equipment out on the roads to the many fields they're tending. New rural residents commuting into town are often in a hurry; they're generally unfamiliar with the speed and hand signals used by farmers moving farm equipment on the roads. This presents both a potential traffic hazard from impatient drivers in a hurry to pass and a sense of discouragement among farmers that the public doesn't want them there.



**Soybeans in Northern Durham County**

Tobacco-, grain- and bean-growers also express particular concerns about the plight of their landlords. Renting land from so many aging landowners, they're acutely aware of the tenuous availability of this land for agriculture and the multiple forces pushing these landowners to sell the land for development. They're interested in helping these landowners maintain present use value tax status, plan for the future of their farm with estate planning, and participate in land and water conservation programs. Several renting farmers mentioned that they spend a significant amount of time helping these landowners fill out paperwork, and they thought County services could potentially help out with this role.



### iii. Fruits and Vegetables

Thirty-two vegetable growers tend 85 acres, and 9 farms report 19 acres of orchards. With relatively small acreage, Durham produce is generally marketed directly to



**Strawberries on Page Farm**

consumers, either through pick-your-own, on-farm stands, or farmers' markets. Produce growers report general satisfaction with their farming conditions. They feel that they play an important role in educating the general public about agriculture, receiving positive feedback from neighbors about their efforts, and engaging their entire family in the farming operation.

One concern heard from pick-your-own operations is the challenge of maintaining signage about their farms within municipal jurisdictions. In general, they have no problems from the County with signs advertising their operations, but they mention that Cary and Durham have been aggressive about removing advertising signs within city limits. They're also concerned about the potential for the passage of stricter rules governing farm stands, such as limiting the number of days that these stands can remain open.

### iv. Greenhouse, Nursery, and Floriculture

Eleven farms produce bedding plants and flowers. One farm grows greenhouse tomatoes, and two cultivate mushrooms. Nineteen operations produce nursery stock on 69 acres, resulting in over 4 million dollars of sales, making this easily the highest-grossing category of agricultural sales. These operations are generally located on small acreage, and their sales are driven in large part by new commercial and residential construction, so development pressure actually improves their bottom line. Nursery owners expressed concerns about potential new watershed rules that would heavily regulate water usage, require additional permitting barriers for fertilizer and pesticide applications, and increase the level of red tape for landscaping companies.



**Nurseries are the highest grossing category of agricultural sales in Durham County, 2007 Census of Agriculture**





These growers suggest several areas in which the County could support their operations:

- recycling agricultural plastic,
- training new farmers in small business development, utilizing university MBA students,
- coordinating supply orders for small farmers to achieve economies of scale
- promoting locally grown products.

#### **v. Livestock**

Although beef cattle is the second largest agricultural commodity in the County, there are no livestock markets, processing facilities, or sale/show barns in the County, which no longer has the critical mass to support these facilities. Nonetheless, grazing livestock remains an important part of the farm landscape, supporting hay growers, fence builders, and the diversified farms on which they reside. Of Durham's 242 farms, 54 farms raise beef cattle, 2 have dairy cows, and 38 farmers raise almost 1000 goats. In addition, 6 have pigs, 17 raise sheep, and 32 raise laying hens, all at the small-scale level.



**Beef cattle is the 2<sup>nd</sup> largest agricultural commodity in Durham County, 2007 Census of Agriculture**

At several public meetings, farmers and consumers expressed an interest in a local livestock processing facility, particularly for beef.

Currently, the closest plants to Durham that offer the potential of meat processing are Chaudhry Halal (beef, goats, lamb, poultry) in Chatham County and Matkins Meats (pork, beef) in Caswell County.

Durham County is partnering to develop the Piedmont Food & Agricultural Processing Center in Hillsborough. The initial phase of this project, proposed to be opened in July 2010, will provide space to farmers and entrepreneurs for processing, storage, and aggregation of locally grown farm products. A potential second phase could include meat processing options, based upon local demand and availability of funding.

No Durham County beef growers currently market their beef as locally grown or grass-fed. On the 4/16/09 Farmland Protection Tour for County leadership, caterers were unable to procure any Durham-grown beef. With the huge interest in locally grown and natural meats, this represents a significant niche opportunity for an entrepreneurial farmer. Pasture-raised livestock can also coexist with moderate levels of neighboring



development, as the equipment, chemical, and manure management needs of these operations are minimal.



**4-H'ers practice their leadership skills in preparation for a regional competition**

#### **vi. Horses**

Durham County has seen dramatic growth in the equine sector in recent years, as more urban and mini-farm residents have taken up riding as a leisure activity. This has presented opportunities in haying equipment, fencing services, boarding and training facilities, and pasture seeding and renovation. A recent study by the NC Horse Council estimated 5490 horses in the County, resulting in \$33 million in inventory value, placing Durham among the top quarter of equine counties in the state.<sup>17</sup>



Horses may be the first step into the agricultural world for ex-urbanites, offering the opportunity for boarding and agritourism income for existing farms. However, these new horse operations also present soil-conservation and education challenges, as beginners may not have a thorough understanding of animal husbandry, forage management, or operation of

<sup>17</sup> <http://www.ncruralcenter.org/pubs/equinestudy050809.pdf>



traditional farm machinery. With no locally based livestock extension agent, these beginning horse farmers will not have a clear place to turn for information.

The equine community is interested in expanding the availability of trails for equestrian use. They're willing to be active partners and volunteers on trail maintenance and lobbying for funding needs. They're also looking for the General Assembly to clarify the status of horse operations as an agricultural enterprise for Present Use Value property tax purposes; the revenue statutes mention only the growth and production of horses, while the definition of agriculture is more expansive in the Farmland Preservation statutes. The NC Horse Council (whose current executive director is a Durham resident) is pleased that the Durham tax office considers all portions of the equine farm qualified to be taxed as agricultural property.

#### **vii. Hay and Forage**

The beef cattle and horse sectors support 62 local grass growers tending 2244 acres of hay and forage.

Kings Mill Dairy, the sole remaining dairy in the County, has expressed interest in buying local alfalfa hay, if someone could provide a quality product in large square bales. According to the Census of Agriculture, no alfalfa is currently being grown in Durham, though six farmers each grow it in neighboring Wake and Granville counties. Combined with the growing horse population, there is clearly a steady market for high-quality square-baled hay.

#### **viii. Other**

According to the Census of Agriculture, fourteen County farmers raise bees, with five reporting commercial honey sales; however, local beekeepers associations estimate that there are 35 active beekeepers. Durham has three farms reporting grape sales and no wineries, along with two farms growing pecans.



**Beehive**

### **e. Market Opportunities**

#### **i. Farmers Markets**

The Durham Farmers Market operates in a downtown pavilion on Foster Street on Saturday mornings and Wednesday afternoons. Celebrating its tenth year, the market provides a wide variety of food and crafts for up to 3000 customers daily during the peak of the summer season. With producer-only sales from farms with a 70-mile radius, the market features 60 vendors, including six from Durham County. New products are continually being added, including buffalo meat, wine, and mushrooms. With the support of Durham Central Park and the city and County governments, the market continues to be a major draw bringing citizens together downtown.



Duke University Medical Center has hosted a market on campus on Friday mornings since 2001 and offers a mobile farmers market on Tuesday afternoons. There is a small farmers market at Northern High School.

## **ii. Institutional Sales**

Beyond the current direct marketing channels of farmers markets and restaurants, there are several additional sales opportunities worth exploring in the County. Durham has a wealth of institutions serving food to large numbers of individuals on a daily basis: Duke University, Duke University Hospital, Durham Regional Hospital, the Durham Public Schools, and a multitude of employers in the Research Triangle Park. Although individual farmers in the County are too small to fill the needs of these buyers, Durham could serve as a central consolidation and redistribution point for area small farms to achieve economies of scale for buyers needing a large amount of consistent product. With a supply of empty warehouses and downtown redevelopment efforts, Durham could develop a centralized food distribution facility to serve larger buyers for minimal investment.

## **iii. Community Supported Agriculture**

Another intriguing trend in direct marketing is the growth of Community Supported Agriculture, in which a consumer buys a share of a farm's produce for the season, receiving a weekly box of the current harvest. CSAs provide operating capital for farms at the beginning of the growing season, when they need it.

There are a number of CSA drop-off locations in Durham: Nortel, Sarah P. Duke Gardens, Eno Restaurant & Market, & RTI International. The Duke Mobile Farmers Market provides CSA facilitation from a number of area farms to the university community.

The North Carolina Cooperative Extension website<sup>18</sup> lists 51 CSA farms in the NC Piedmont, with none of those located in Durham County. Farmers from Person, Granville, Orange, and Chatham Counties are filling this market niche in Durham. With a large number of urban consumers, as well as concentrations of large employers, Durham farmers could have a ready-made market selling CSA shares to urban consumers and commuters. There is a potential of having new CSA drop off locations at major employers. These employers could sponsor signups in connection with their health and wellness plans.

There is also the potential for cooperative activity by multiple farmers and community groups to expand this marketing opportunity. A central distribution warehouse could

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<sup>18</sup> <http://www.ces.ncsu.edu/chatham/ag/SustAg/csafarms.html>





consolidate the production of many different types of farms (produce, meat, flowers, nuts, etc.) into a diverse year-round share box. Farmers could collaborate on production planning to smooth out their supply and variety over the course of the year.



**Nothing beats a fresh picked tomato**

#### **iv. Retail Sales**

The Durham Food Coop, which has placed an emphasis on the sale of local foods, is currently undergoing reorganization. A new cooperative grocery, the Durham Central Market, is selling ownership shares, creating bylaws, and preparing to open in early 2010. Whole Foods Market, a 30-year-old national natural foods grocery chain, is located across from Duke's East Campus. Whole Foods purchased the Durham-based Wellspring Grocery chain in 1991 on its way to becoming the world's leading retailer of natural and organic foods. The company's website<sup>19</sup> states, "We are permanently committed to buying from local producers whose fruits and vegetables meet our high quality standards, particularly those who farm organically and are themselves dedicated to environmentally friendly, sustainable agriculture. We are greatly increasing our efforts in this regard by further empowering our individual store and regional buyers to seek out locally grown produce." They have started a Local Producer Loan Program and are strong supporters of local sustainable agriculture non-profits in the region.

The Durham Whole Foods store is currently working with about five area vegetable producers and an egg producer; only one is from Durham. They see strong potential for additional products but are having a hard time locating Durham County producers who can meet their quality standards and demand volume. The local angle does have value, but farmers will need to assure a steady supply and do some extra relationship building with staff and customers in the store to access that market channel and receive a premium. Supplying farm photos and offering to hand out samples to customers at peak shopping times can help to provide the face of the farmer.

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<sup>19</sup> <http://www.wholefoods.com>



## **v. Restaurants and Caterers**

Durham has a wealth of fine restaurants with a long tradition of buying local products. Magnolia Grill and Nana's are nationally renowned for their contribution to local agriculture. Many chefs make the weekly pilgrimage to a farmers market to buy the freshest seasonal items available, and their menus change to fit what's coming from the farms. Some restaurants note that the high public demand for locally grown foods is raising prices and making it more difficult for restaurants to keep their price points for finished product down, but they appreciate the incentive that provides for the growers.

Owner Ben Barker of Magnolia Grill would like to see the County set a specific numerical goal for the amount of land to be protected for agriculture. He meets so many young people interested in becoming farmers that he is confident that, with an adequate land base, the County will have a solid community of farmers in the next generation. He would like to see financial and technical assistance available for these start-up operations. The Eno River Restaurant and Market will open in downtown Durham in winter 2009. Owner Richard Holcomb, who also owns Coon Rock Farm in Hillsborough and Zely & Ritz Restaurant in Raleigh, looks to source all of his product from local organic and sustainable growers but has concerns about year-round availability, especially of local meats. Holcomb thinks that a skilled local butcher would have enormous opportunities. In addition, he would like to see an organized effort to highlight local businesses that use local products, such as South Carolina's Fresh on the Menu program.<sup>20</sup> He would also like to see the County source a portion of all the food that it purchases (for schools and jail) from local growers (see Local Food Policy Options for Counties blurb on following page).

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<sup>20</sup> <http://www.certifiedscgrown.com/FreshOnTheMenu>



## LOCAL FOOD POLICY OPTIONS FOR COUNTIES

Woodbury County, Iowa, has instituted a local policy for farmers who make the transition from conventional to organic production. The program rebates 100 percent of the property taxes on their organic working lands for up to five years. The policy is easily verifiable because it is based on the farmer being in compliance with the USDA's National Organic Program. The policy has had a ripple effect in that it is also attracting organic food processing companies to the area because it indicates that there is local support for their type of business.

In addition to the organic transition program, Woodbury County has also enacted a policy that requires public institutions to source locally produced organic food for their food service operations when it is available. The Woodbury County Jail, Work Release Center, and Juvenile Detention facilities are examples of institutions required to follow this policy. The policy requires that a local arbitration board be established to assure fair value to the County. This policy has contributed to building the market for specialty and value-added food and farm operations.

Rob Marqusee, Director of Rural Economic Development for Woodbury County, believes that he was able to enact these policies because he had a supportive County Board of Supervisors. New food policy needs to have a critical mass of supporters pushing for it and motivating supervisors to learn how it could provide long-term economic benefits. Food policy supporters need to be able to clearly outline costs and benefits to the County. For more information go to <http://www.woodburyorganics.com>

Additional suggestions for local food policies include:

- Schools purchasing local produce for healthy snacks as part of a comprehensive children's wellness policy;
- Growers receiving tax abatements for land on which they were growing food for local consumption, perhaps as part of land use policy reform;
- Instead of establishing new industrial parks, designating County lands as agricultural heritage parks, which would be specifically reserved for operations such as farmers markets, community gardens, and agritourism enterprises;
- Local option sales tax could be used to market local foods, build local infrastructure, or create a place-based brand; and
- *Establishing a local food policy council, a local food coordinator, or a director of rural economic development to help move the local foods program forward.*

Durham also has a wealth of caterers supporting area farmers, with the potential to collaborate on promotional activities to highlight the local growing scene. Amy Tornquist of Sage & Swift Catering and Watt's Grocery Restaurant was featured at the top of the *Raleigh News & Observer's* 8/8/09 ranking of the Top 50 Culinary Reasons that the Triangle is a great place to live.

*A comment heard continually from interviewees was, "Finding adequate markets isn't the problem." Interviews with chefs, produce buyers, farmers, and consumers indicate that there are plenty of good outlets for sales of quality product in Durham County; all that is needed is more locally grown food to fulfill the demand.*



Nonetheless, to attract new farmers and encourage expansion by existing growers, Durham may want to consider a local purchase program similar to the Woodbury County policy discussed in the sidebar. Durham could institute a “10 in 10” program, in which County facilities are required (and private institutions are encouraged) to purchase 10 percent of their food locally within 10 years. They could start with 1 percent the first year, 2 percent the second, and build up to 10 percent by 2020. This timeframe is modest enough to be realistic, yet bold enough to capture the public imagination and raise awareness about the importance of local food production.



#### **f. Urban Agriculture**

Durham is a hotspot of urban agriculture. Between urban homesteaders and community gardeners, the city is a statewide leader in food production within small spaces.

The 2009 text amendment to the Unified Development Ordinance permitting beekeeping and backyard chickens reflects the growing interest among urbanites in exploring agricultural opportunities. The city and County should continue seeking ways to expand the provisions of this ordinance.

Founded in 1994, SEEDS (South Eastern Efforts Developing Sustainable Spaces) is a non-profit community organization whose goal is to teach people to care for the earth, themselves and each other through a variety of garden-based programs. It operates a community garden in Northeast Durham, helps neighborhoods across the region develop their own gardens, and runs the Durham Inner-city Gardeners (DIG) program, which empowers teens by teaching organic gardening, sound business practices, healthy food choices and food security values. Their garden plots continue to expand as they add hoop-houses, composting, beekeeping, and other activities to their range of production. DIG





participants sell their produce at the Durham Farmers Market, and they also participate in educational and afterschool programs and a summer day camp.

*SEEDS would like to see the Durham County land preservation efforts protect some land specifically for the creation of community gardens. The organization also hopes to teach urban residents the importance of preserving rural farmland for long-term food security.*

With a focus on youth development, SEEDS personnel see several needs to cultivate that next generation of farmers:

- increased emphasis on small-scale sustainable techniques within Cooperative Extension;
- incubator opportunities for newcomers to learn farming skills;
- resources to link prospective farmers with underutilized rural lands;
- improved information exchange between generations;
- increased use of fresh foods in the local school system; and
- better public education on food systems.



**SEEDS youth with eggplant**

### **GROWING POWER**

Will Allen, former professional basketball player and marketing executive at Proctor & Gamble, bought the last remaining farm in the Milwaukee city limits and founded Growing Power in 1995 to teach inner city youth about growing food. Over the past 15 years, Allen has developed an integrated production system demonstrating composting local food and packaging wastes, using heat and fertility byproducts to grow greenhouse vegetables, fish tanks recirculating nutrients to the plants, with worms breaking down the scraps and providing nutrients and bedding for the plants. Even more importantly, Allen has emphasized youth entrepreneurial development throughout this process, as food and worm castings are marketed to local restaurants and individuals without access to fresh, high-quality produce. The program has expanded over the years to other sites in Milwaukee and Chicago. Growing Power has created internships and training programs to teach others to create similar oases in their cities.

Growing Power is now soliciting applications from other locations to serve as Regional Outreach Training Centers, in which a locale such as Durham could begin their own Community Food Systems project and teach other North Carolinians about growing and marketing food in an urban setting.



The Cooperative Extension service works with another 15-20 community gardens in various stages of development. Some are run by churches, other by housing communities, and others by local non-profit organizations or neighborhood associations. Cooperative Extension provides technical assistance and educational programming to these efforts, but continued outreach is needed in a wide range of areas, including fencing, irrigation, business organization, and gardening basics.



Cooperative Extension is adding a part time individual and working with public and private partners to expand efforts for community garden development. In addition, Extension is in the planning stages of development of the South Briggs Avenue Gardens, which will be a community garden and 45 acre outdoor classroom where individuals can go to learn sustainable methods of gardening.



**NE Baptist Church Community Garden**

Durham is well-positioned to become **the** leader of urban agriculture in North Carolina and the Southeast. With the long history, organizational skills, and motivated individuals at SEEDS and other community gardens, Durham can develop a range of training courses to teach other communities about community gardening and youth entrepreneurial skills development. Growing Power, as discussed in the sidebar, is looking to identify and support local organizations to become regional training centers. If Durham began teaching regionally oriented courses in urban agriculture, it would bring new visitors to the city from across the southeast, increasing hotel stays, restaurant meals, and job opportunities.

#### **g. Food Security**

The Community Food Security Coalition, the national leader in advocating for the food needs of the low-income population, defines a secure food system as one in which “all community residents obtain a safe, culturally acceptable, nutritionally adequate diet through a sustainable food system that maximizes community self-reliance and social justice.” The most secure food system is the one in which a large portion of the population is able to feed themselves, either through growing their own food or having convenient access to fresh and affordable locally produced food. Food security is a partnership of growers, consumers,



**Shitaki Mushroom Workshop**

processors, buyers, regulators, and transporters. All the pieces of this puzzle exist in the County, and a concerted effort to help all understand the importance of their roles will strengthen the entire community.

Durham County Cooperative Extension places a heavy emphasis on helping citizens learn to feed themselves, with their support of community gardens and home horticulture.

The Interfaith Food Shuttle has been providing food for low-income residents of Durham since 1991. They have been successful at obtaining and distributing bulk, non-

perishable items, but still find an adequate supply of fresh produce missing from low-income diets. Currently, they are trying to address fresh *food deserts* (defined by the US Department of Agriculture as an area with limited access to affordable and nutritious food) in low-income neighborhoods through community gardens, which bring a wide variety of people together and offer opportunities for nutrition and cooking classes. Their next step is to develop a local farm to be used as a teaching tool for sustainable agricultural production.



With just a few acres of land, they would be able to grow enough food to their food shuttles and existing distribution network of 24 agencies across the County.

The Durham Farmers Market continually strives to increase access to low-income residents, being one of the state's first farmers' markets to accept WIC (Women, Infants, and Children) coupons for expecting and new mothers, and EBT (Electronic Benefit Transfer) cards for the Supplemental Nutrition Assistance Program.

#### **h. Agritourism**

The NC Department of Agriculture's Agritourism website lists one agritourism operation and three state historical sites: Bennett Place, Duke Homestead, and Historic Stagville. Ganyard Hill Farms (see sidebar) is a long-time veteran of traditional agritourism activities such as pick-your-own pumpkins, hay rides, and livestock petting and feeding. Elodie Farms operates a successful goat cheese business and monthly Dinners on the Porch, featuring fresh farm products and gourmet meals from local chefs.

With 1.7 million people living in the Triangle area,<sup>21</sup> local landowners have a prime opportunity to offer expanded recreational opportunities for city dwellers seeking a taste of farm life. The North Carolina Department of Agriculture offers extensive technical support, liability assistance, and networking opportunities for new agritourism enterprises.<sup>22</sup>



**Durham County Agritourism at  
Ganyard Hill Farms**

#### **GANYARD HILL FARMS**

Milton Ganyard began Ganyard Hill Farms in 1995 on Highway 98, moving to his current site on Sharon Road in 2005 when the development pressure got too great. He had problems with signage rules in the early days, but the Farmland Protection Advisory Board worked with the County to ease the rules for farming operations.

Ganyard has also seen the County show increased flexibility on parking regulations, relaxing the requirement for clearly outlined spaces and shrubbery removal generally required for retail businesses. Most of his customers live within 20 minutes of his farm, which features pick-your-own pumpkins, a petting zoo and feeding opportunities, hayrides, and demonstration crops.

The growing number of agritourism operations in the region hasn't hurt Ganyard's business over the years; the influx of newcomers from other parts of the country has created a natural customer base for him.

<sup>21</sup> <http://ftp.tjcog.org/pub/tjcog/regplan/pop5030.pdf>

<sup>22</sup> <http://www.agr.state.nc.us/markets/agritourism/>



### **i. Farm Supply and Finance**

Although farmers report that their needs are met fairly well with equipment and supplies purchased in neighboring counties, there is a general consensus among Durham equipment dealers and lenders that their businesses face a limited future serving agricultural clients. The field crop growers that were their bread and butter are largely gone, and those remaining tend to shop outside the County (or over the Internet) for their primary agricultural needs.

With the number of commercial farming operations on the decline, it is becoming increasingly difficult for the Durham County agricultural sector to support farm input dealers. Holder & Sons Equipment in East Durham is the only remaining equipment dealer in the County; though residential grass-mowing customers have become a larger part of their business, they continue to sell a significant amount of haying equipment to feed horses and beef cattle, as well as providing for new fencing needs.

The primary traditional agricultural input (fertilizer, lime, commercial-scale seed, etc.) providers are located outside the County: Southern States in Roxboro and Creedmoor, Camp Chemical in Roxboro, Browns Farm Service in Orange County, and Hurdle Mills Feed and Farm in Person County. *These businesses are effective in keeping local farms profitable, but they represent economic leakage with agricultural dollars leaving the County. With County farm production expenses approaching \$10 million annually, this presents a notable entrepreneurial opportunity for a local business able to fill niches.*

Traditional agricultural businesses able to adapt to the changing landscape have found success in recent years. Stone Brothers, located downtown, reports a booming business in the lawn and garden segment of the market, as more people than ever before are looking to grow a bit of their own food. This interest is particularly strong in organic gardening, spurred in part by the quality of organic product sold at the downtown Farmers Market. Triangle Farm and Home in Bahama is very active in providing horse, dog, and home lawn care supplies, and they've been active supporters of the local 4-H program bringing a new generation into agriculture.

Carolina Farm Credit, the agricultural lending cooperative chartered by the federal government, is the main farm lender for Durham County. Their Hillsborough office serves their Durham clientele, and farmers report a positive experience with their understanding of the changing face of agriculture. Commercial banks have generally gotten out of agricultural lending, as the small volume of loans doesn't justify hiring personnel with farm expertise. Carolina Farm Credit personnel see the future of agricultural finance in Durham to be primarily in land ownership loans, rather than operating capital. The type of new produce and equine operations opening up in the County don't buy a lot of equipment or take out operating loans; they're generally small farms, often coming in with a separate source of income, so they don't need to look to traditional sources of finance.



#### **j. Latino Population Growth**

The Triangle's rapidly growing Latino population offers intriguing possibilities for agriculture. Between preferred vegetable varieties, two large-scale supermarkets (Compare Foods) and numerous *tiendas*, and value-added opportunities with mobile taco vendors and salsas, this customer base is largely untapped by Durham's farmers. In addition, with Latinos providing the bulk of agricultural labor in North Carolina these days, there may be growing numbers of prospective Latino farm operators in the future (only four out of 242 farms in 2007). In addition to the barriers faced by other beginning farmers, this population must contend with a lack of educational resources available in printed or spoken Spanish, as well as cultural challenges in the credit, risk management, and land tenure arenas. Collaborative work between the Latino Community Credit Union (headquartered in Durham) and Farm Credit could reap additional lending opportunities for both organizations. The NC Cooperative Extension Service and Rural Advancement Foundation International-USA are developing publications and outreach services to prospective Spanish-speaking farmers. With proper attention to their needs by County staff and support services, this population could be a valuable source of innovation in the farm sector and an important addition to Durham's diverse cultural mix.

#### **k. Forestry**

Durham County has 84,000 forested acres (44% of the County land base), including 66,200 in private ownership.<sup>23</sup> 86% of the timberland is owned by individuals, while 14% has corporate owners. 611 landowners have a forest management plan or practice plan, which are required for eligibility for the County Present Use Value taxation program. These plans include recommendations on thinning, controlled burning, harvest, and replant, yet don't have specific implementation requirements. A much smaller number of landowners have silviculture plans, which provide more specific recommendations for management of mixed species stands. The County Ranger at the local office of the NC Division of Forest Resources is available to write these plans for landowners, along with urban forestry plans.

Durham's small-lot ownership pattern tends to create significant management challenges, as mixed species grow naturally in local soils and climates. Stands of economically unimportant trees such as Virginia Pine and Black Cherry tend to develop along the edges of the forest and will creep out into fields, without frequent attention and management. It also becomes difficult to attract foresters for harvest on small acreage, as the costs of moving equipment and dealing with a large set of potential neighbor complaints in heavily developed areas creates a burdensome cost on these small businesses. There are no sawmills remaining in the County. Any wood harvested must be taken to Alamance, Johnston, or Person County for processing.

Data from 2007 show 60 harvests completed on 456 acres, with only two citizen complaints about forestry practices. The County Ranger investigates all complaints to assure that the

<sup>23</sup> [http://www.srs.fs.usda.gov/pubs/rb/rb\\_srs088.pdf](http://www.srs.fs.usda.gov/pubs/rb/rb_srs088.pdf)





harvest complies with state-mandated best management practices to protect water quality. During that same year, 75 forest management plans were completed on 5000 acres.

An additional challenge to forest management is the aging landowner population and new ownership by absentee landowners and those unfamiliar with forest practices. As the older generation passes land along to their adult children who live elsewhere, they may be in need of forest management education.

There are several potential solutions to Durham's forest management challenges. Better education of new landowners could spread familiarity with taxation programs, forest management plans, and possible forestry solutions on small acreage. The forestry office could coordinate with Extension, SWCD, and the Farmland Protection Advisory Board on educational programs and outreach materials.

The most cost-effective forest management techniques for most landowners is to hire a consulting forester to provide specialized guidance and recommendations, and to help arrange a bidding process for harvest at an optimal time in terms both of stand quality and timber markets.

The County ranger maintains a list of foresters willing to harvest small lots. Even better, landowners could band together to create larger blocks of harvestable timber to attract a logger able to bring enough equipment to create economies of scale. With proper planning and coordination, they could collaborate on management techniques such as timber stand improvement and controlled burning to assure that their woods become of harvest quality on the same timeframe.<sup>24</sup>

Finally, the County ranger emphasizes the importance of expanding forestry education to the County's youth. He would like to reinstitute timber management in the environmental science curriculum, to prepare students both for careers in forestry and to help their parents manage family lands.



**Durham County has 84,000  
forested acres**

<sup>24</sup> <http://www.blueridgeforestcoop.com/>



## 1. Education

The education of Durham's young people will go a long way in determining whether the County cultivates its own next generation of farmers. Cooperative Extension, the Soil and Water Conservation District, and the Durham Farm Bureau have all expressed interest in expanding agricultural and environmental educational programs. Jordan High is the only remaining high school educational program, and it's located far from the majority of active farms in the north and east ends of the County. Without active learning opportunities close to the majority of available land, it will be difficult to connect students with practical agricultural learning opportunities.

Mike Dupree, local nursery owner and former middle school teacher, is currently seeking funding support to install greenhouses to be incorporated into the science curriculum at local schools.

Cooperative Extension offers classes on sustainable urban agriculture throughout the year through their Extension Gardener Series and Sustainable Landscape Series. The horticulture agent and master gardeners provide additional presentations throughout the community upon request on a variety of topics. Their combined efforts turn out approximately 100 presentations, workshops, and events each year, as well as individual consultations.



**SWCD staff teaching 4-H'ers about water quality on farms**



**4-H youth participating in livestock show**



**SEEDS DIG members extend the growing season with hoop-houses**



## 4-H

Samantha Gasson operates a 4-H program on her farm in Bahama. She teaches kids from town to raise calves and display them at a regional dairy show in Orange County. She finds it to be an extraordinary learning experience for these urban youth and would like to expand the program. With the lack of a livestock program in Durham County Cooperative Extension (beyond the Orange County “loaner” agent, who retired in September 2009), this 4-H program must raise all its operating funds and technical assistance privately. Durham contributes no funds to either the livestock agent or the 4-H program. Samantha would like to expand the number of kids in her program and teach them a full range of value-added dairy skills (including cheesemaking), to be added to the other rural life skills (such as cooking, carpentry, and sewing) that can be learned in 4-H.

Although they’re making the most of regional collaborations to use the Orange County agent and show barn, Samantha sees a strong need for more facilities and financial support to meet the clear interest of this next generation of farmers. She worries that, once the Orange Extension agent retires, the replacement might not be inclined to support Durham efforts, since Durham is no longer contributing financially to this position. They need a separate cheesemaking facility, requiring technical assistance with the design and regulatory hurdles, as well as start-up funding. She also has a hard time finding structures in the County for events like science fairs or awards banquets.

### m. Key Issues

- **Durham County needs to attract new farmers.** The market opportunities clearly exist for enterprising growers, but the County lags behind nearby Orange and Chatham in startup operations.
- **The livestock sector needs support.** Durham County no longer funds the joint Cooperative Extension position with Orange County, but still receives some technical assistance through the good graces of Orange County Extension. With the recent retirement of the current agent, this is unlikely to continue. Great opportunities exist with direct marketed pasture-raised livestock, but farmers will need help.
- **Farmers need business development assistance.** An Agricultural Economic Development Coordinator, such as the position in Orange<sup>25</sup> or Polk<sup>26</sup> Counties, could work with farmers markets, help recruit new farmers, coordinate sales to institutions, serve as a liaison to the planning department for any regulatory hurdles related to value-added enterprises, and promote local products. (For further information on the Orange County Agricultural Economic Development Coordinator please see sidebar on following page)

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<sup>25</sup> <http://orangecountyfarms.org/>

<sup>26</sup> <http://www.polkcountyfarms.org/>





- **Youth connections to agriculture are crucial.** City kids are learning to grow food and make money doing it through SEEDS, community gardens, and 4-H programs. Schools and agricultural organizations need to find a way to stimulate a similar interest amongst rural youth.
- **Land transition must be addressed.** Farmers are aging; as they retire, absentee land ownership increases and makes the productive land base vulnerable. Some family members without a direct connection to agricultural production may see no alternatives to selling the land, and the County can provide important assistance to families dealing with challenging transition issues of taxes, management, and equity, by hosting clinics and workshops for legal and financial advisors.

### AGRICULTURAL ECONOMIC DEVELOPMENT COORDINATOR

Noah Ranells is the Agricultural Economic Development Coordinator for Orange County – and is co-owner of Fickle Creek Farm. In the former role, he is helping to build infrastructure to support other local farms like his. To that end, in the few years since being the first to fill such a position in the state, Ranells has secured more than \$1.1 million in grant funding for such infrastructure projects in Orange County. His current projects include the creation of a multi-county shared use food and agricultural processing facility. The facility will provides the government-approved commercial processing facilities that are required to process and/or package produce into a “value-added” state, through which a farmer can make more money on the raw products they grow. A small producer normally cannot afford to construct a commercial kitchen or processing facility for their sole use; the new center will fill that gap, and provide new economic opportunities to small farmers across the region. He is also involved in setting up an incubator program for apprentice farmers, and organizing other workshops, helping farmers explore ways to get their products to market and to maximize the price those products can command.



## **6. LAND USE PLANNING**

Durham County has adopted a series of long-range land use plans that guide the development of land within the County. Planning and zoning issues are guided by a joint City-County planning department, which implements the goals of these plans and the wishes of the commissioners and citizens of the County.

Durham is also engaged in regional planning efforts through the Triangle J Council of Governments and transportation planning with the Durham-Chapel Hill-Carrboro Metropolitan Planning Organization.

### **a. Long-Range Plans**

#### **i. Comprehensive Plan**

The Durham Comprehensive Plan, adopted in 2005 and updated in 2009, is the primary document guiding County planning decisions. The Plan provides direction on where and how private development should occur and how the City and County should provide public facilities and services to support future growth. The Plan is long range in scope, focusing on the ultimate needs of the community rather than the pressing concerns of today. Nonetheless, the plan isn't enforceable, and rezoning can occur out of conformance with the plan; amendments are permitted at any time.

Agriculture and farmland preservation are supported in multiple areas in the comprehensive plan, reflecting the understanding by citizens and County leadership that farms contribute in many ways to the quality of life for everyone.

#### **1. Land Use Element**

- *Policy 2.3.1d* directs the Unified Development Ordinance to include conservation subdivision provisions within the Rural Tier, with appropriate incentives to encourage the provisions of more open space including farmland.
- In *Policy 2.3.1f*, the Commissioners are directed to use conservation easements to preserve farmland. The Farmland Protection Advisory Board is charged with reviewing all requests for conservation easements to determine if the land is prime farmland. The Farmland Protection Advisory Board is also directed to review any publicly purchased land for a prime farmland designation, in which case it would be declared Agricultural on the Future Land Use map, with development limited accordingly; however, this provision has never been tested in practice.
- *Policy 2.3.1h* calls for changes in the UDO to increase the buffer between agricultural and residential uses and to ensure the compatibility of any proposed development in the vicinity of Voluntary Agricultural Districts. *Note: The requirement in the current UDO is for a 50-foot buffer, with no discussion of VADs. (Sec. 9.4.5, Constructed Buffer)*



- *Policy 2.3.1k* directs the County Engineering department and Soil and Water Conservation District to conduct a Cost of Community Services (COCS) study. COCS studies, developed by American Farmland Trust, compare the fiscal contributions and requirements of various classes of land use. Six North Carolina counties have completed these studies on the local level, finding that residential properties actually cost each County more in needed services than they provide in revenue, while farm and forest landowners pay more than their fair share of taxes.
- *Policy 2.3.1a* specifies that the Rural Tier development focus is to ensure that new development promotes agricultural uses and single-family residential development on large lots to minimize demands for public infrastructure. *Policy 2.3.2b* includes agriculture as an allowable use within the Suburban Tier, as well.

## **2. Economic Development Element**

To encourage new business development, *Policy 6.1.1g, Agricultural Preservation*, encourages the Cooperative Extension Service, the Soil and Water Conservation District, and the Farmland Protection Advisory Board to work with neighboring jurisdictions to explore opportunities for agricultural preservation and niche farming. The joint venture with Orange, Chatham, and Alamance to create a food value-added processing center is a fine example of regional collaboration. The County previously partnered with Orange County to share an extension livestock specialist, but with Durham no longer contributing financially, they receive much less support in this area. However, with increasing budgetary pressures, a growing variety of services available to new farmers in surrounding counties, and closely interconnected marketing opportunities, Durham County should seek to expand collaborative ventures.

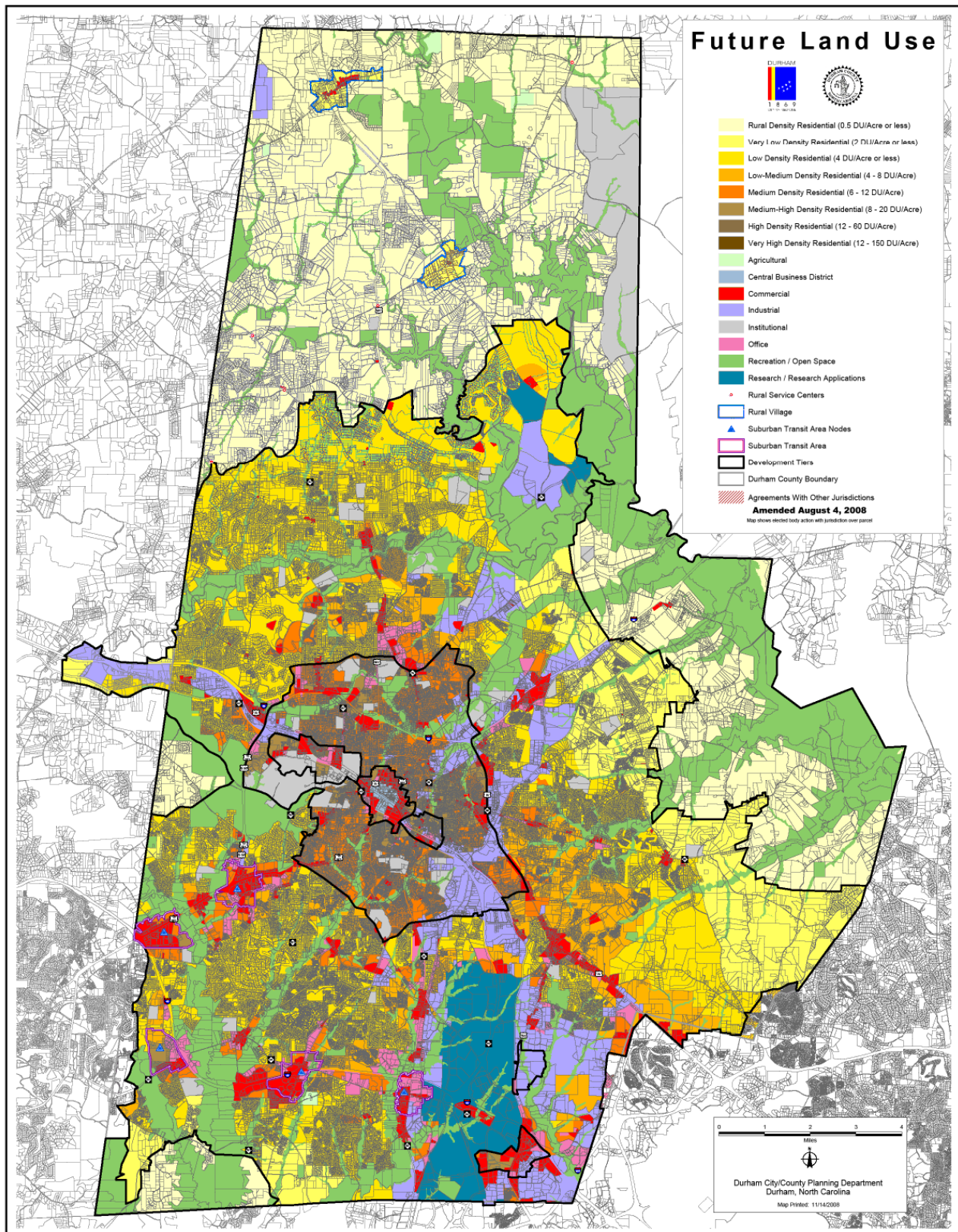
## **3. Conservation and Environment Element**

Farmland Preservation is highlighted as a priority issue under Open Space Objective 7.2.3, asking important questions about what lands should be targeted and what techniques are most effective in protecting this land. Here, the plan emphasizes the importance of continuing to support existing institutions and programs: Farmland Protection Advisory Board, Agricultural Priority Areas, Voluntary Agricultural Districts, the purchase of agricultural conservation easements, the Present Use Value Tax program, outreach on the importance of farmland preservation, and the allowance of agricultural activities by right within the Rural Tier.

### **ii. Adopted Open Space Plans**

In addition to the Comprehensive Plan, the City of Durham and Durham County have adopted three area plans that drill down into greater detail to preserve open space in priority locales of the County. These open space plans are all focused around the protection of watersheds; well-managed farmland protected from future development is a crucial contributor to water quality in the area.





### **1. New Hope Creek Corridor**

The New Hope Corridor Open Space Master Plan was adopted by Durham and Orange Counties, as well as the towns of Durham and Chapel Hill, in 1991-1992. With a goal of “creating an open space corridor linking the Eno River State Park, the New Hope Creek, Corps Lands, and the growing communities of Durham and Chapel Hill for aesthetic, environmental, educational, and recreational purposes, and as a means of shaping the urban form of the area,” this plan focused on land acquisition and public access through critical environmental areas. Although the plan didn’t explicitly discuss agriculture, it has created an important conservation corridor which could integrate well with farms. In fact, there are now two area farms enrolled in the VAD program, one of which has worked closely with a nearby school.

### **2. Little River Corridor**

The Little River Corridor Open Space Plan was adopted by the Board of Commissioners and Durham City Council in 2001. A primary goal of this plan was the protection of the water supply in the Little River Reservoir. Farms in the area are noted for their physical beauty, contribution to the economy, and importance in providing wildlife habitat.

The plan discusses the history of Quail Roost Farm, which began as a hunt club, evolved into an award-winning dairy of international renown for breeding Guernsey cows, and later became horse stables. Also important today for its birding habitat, a 32-acre portion of Quail Roost has now been protected through the donation of a conservation easement to Durham County.

At the time of the Little River Corridor Open Space Plan, 20% of the land in the Little River Basin was enrolled in Present Use Value tax program for farms and forests, covering 6500 acres.

Citizens participating in the development of the Little River Open Space Plan indicated that what was most important to them was the preservation of open space along properties that abut designated wildlife corridors, wildlife core areas or scenic roadways. Of lesser importance was the value they placed on the preservation of farm structures such as tobacco barns and historical houses.

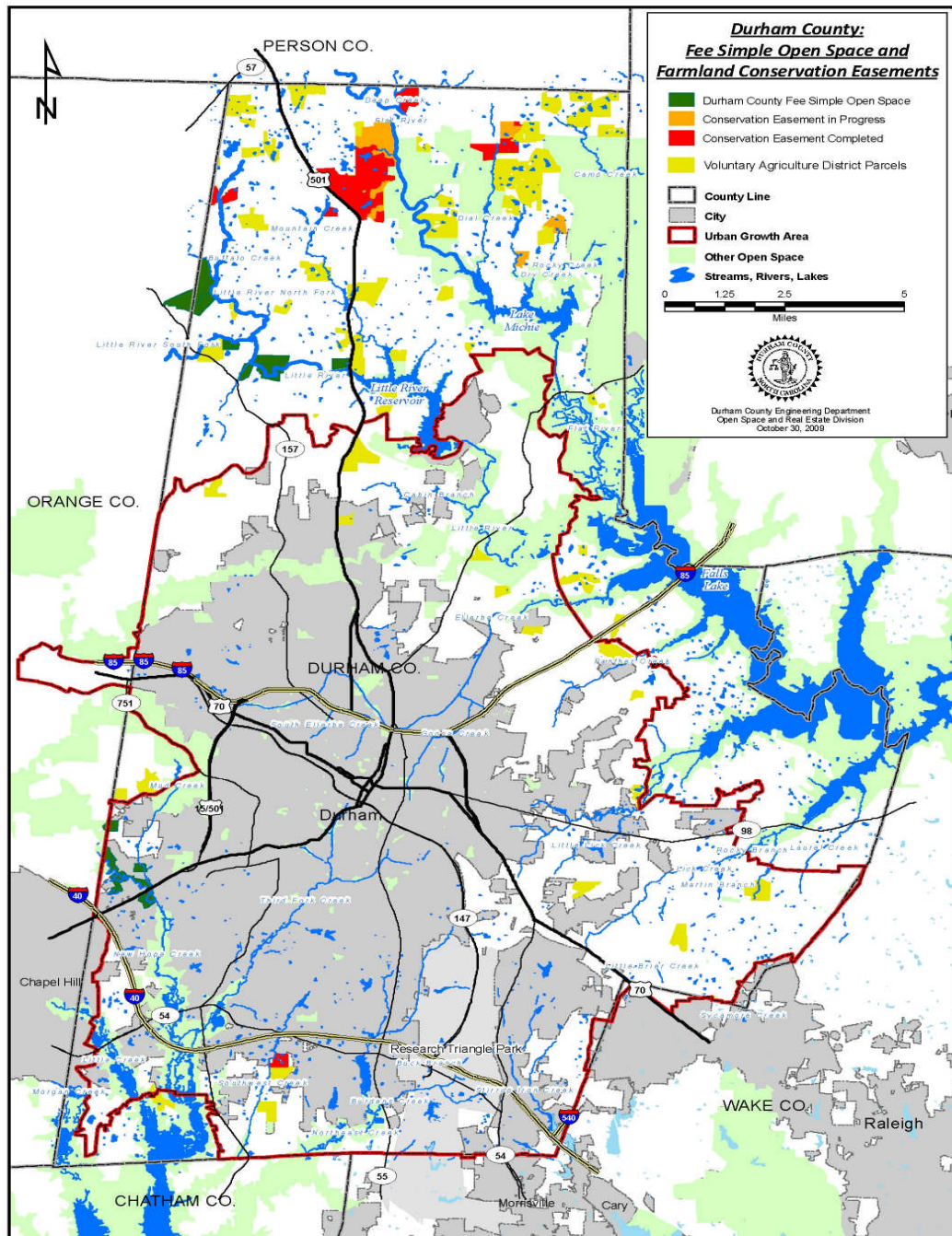
### **3. Eastern Durham**

The Eastern Durham Open Space Plan, adopted in 2007, notes the historical predominance of cattle and tobacco farms in the Lick, Little Lick, and Panther Creek Watersheds; now, these areas are facing heavy development pressures with the growth of Research Triangle Park. Residents of the area place high priority on family farms for historical and cultural values, encouraging voluntary farmland preservation tools to assure that they continue. The plan encourages the identification of key farms in the economic and natural landscape and continued financial support for the purchase and donation of agricultural conservation easements. High priority is to be placed on those eastern Durham properties that





adjoin designated wildlife habitat areas, wildlife movement corridors, and impaired streams. Several historic farmsteads and farmhouses are noted for their cultural significance.



### iii. Plans in Progress

As of August 2009, an Urban Open Space Plan is just getting started. Given the growing emphasis on agriculture in the evolution of these open space plans over the past 20 years, City-County staff is to be commended for continuing to elicit and respect the concerns of the farming community.

## b. The Unified Development Ordinance

The Unified Development Ordinance (UDO), adopted by the County Commission and Durham City Council in 2006, is used together with the Comprehensive Plan to implement official County land use policy. Sprinkled throughout the UDO are requirements for implementing planning policy as it relates to agricultural operations and farmland preservation.

### i. Purpose and Intent

A number of goals related to the future of the agricultural landscape are explicitly supported in sections 1.2.1-1.2.2:

“It is the purpose of this Ordinance to promote the health, safety and general welfare of the residents of Durham City and County. In support of these purposes, this Ordinance contains regulations designed to:

- Address future needs, growth, and change in the jurisdiction;
- Conserve land and water resources;
- Preserve groundwater quality and supply;
- Recognize geologic features, soil and topography;
- Improve air quality;
- Examine the most appropriate use of the land;
- Provide for the needs of agriculture.”

### ii. Development Tiers

Section 4.1.2 outlines the development tiers in the County, intended “to ensure that development reflects the character of the area within which it occurs and to minimize the cost of extending infrastructure into areas inappropriately. The tiers shall function as overlays, establishing guidelines within which different development patterns, intensities, and densities shall be utilized.”

The primary area of concern for preserving farmland is the **Rural Tier**, “that area of Durham that lies outside the Urban Growth Area and largely within watershed critical areas within which development should maintain a rural focus to encourage preservation of agriculture and protect important water resources. Development within this area



should require large lots to minimize demands on infrastructure, with limited commercial areas.”

### iii. Agricultural Use Standards

Agricultural uses within city and County limits are outlined in Article 5. Within city limits, most agricultural uses are allowed by right within the RR (Residential Rural) and RS-20 (Residential Suburban-20) zoning districts only. Forestry practices are allowed by right in all city zoning districts, as long as conducted according to an approved forest management plan.

Durham County does not regulate farming activities through the UDO. Agricultural uses in the County outside city jurisdiction are allowed as defined under state statutes.

Greenhouses and nurseries with a retail component are regulated under the UDO as *retail uses*, not *agricultural uses*.

*Principal uses* are allowed by right. *Accessory uses* are allowed by right, if in conjunction with a principal use. *Uses not included* are not allowed and are handled in a different section of the UDO.

Section 5.2 defines these agricultural use categories:

Principal Uses	Accessory Uses	Uses Not Included
Animal raising including horses, hogs, cows, sheep, goats, and swine, poultry, rabbits, and other small animals, fish hatchery, aquaculture, dairying, personal or commercial animal breeding and development. Greenhouse or nursery not engaged in retail trade. Floriculture, horticulture, pasturage, row and field crops, viticulture, tree or sod farm, silviculture. Livestock auction. Riding academy or boarding stable.	Ancillary indoor storage. Animal (including poultry) processing, packing, treating, and storage, provided that these activities are accessory and secondary to normal agricultural activity. Associated offices. Auction ring. Barns, garages, sheds, silos, stables (noncommercial). Home occupations. Sales of agricultural products grown or raised on the premises. Docks, noncommercial.	Animal waste processing. Commercial feed lots. Livestock slaughtering. Processing of food and related products. Solid or liquid waste transfer or composting. Housing for ranch or farm labor. Resource Extraction. Limited Agriculture (City Only).

Section 5.2.3 allows certain agricultural-type accessory uses for household living, including non-retail greenhouses, apiculture, and limited agriculture.



#### **iv. Backyard Chickens**

In recent years, city residents have been interested in expanded urban agriculture opportunities, driven by a growth in backyard chicken flocks around the Triangle area. In 2009, Durham City Council adopted a Text Amendment (Sections 3.23, 5.4.12) to the UDO that allows citizens throughout the City to keep a limited number of female chickens (no roosters) for personal use with a permit and subject to certain standards. Residents are required to obtain a Limited Agriculture permit from the City-County Planning Department. The text amendment includes clearly defined requirements on numbers of birds and housing, notification of neighbors, and inspections. Commercial operations are not permitted.



Subject to resources and administration priorities, planning staff can create additional text amendments for governing body consideration to cover needs of other new agricultural activities that may not be covered in the current Unified Development Ordinance. The text amendment is a flexible tool that can address concerns that arise between major revisions of the UDO. The City Council and County Board of Commissioners make the ultimate decisions on ordinance revisions.

#### **v. Agriculture as Open Space**

Agricultural land is considered to be natural open space for development and subdivision requirements, according to design standards in section 7.2. Thus, developers could protect farmland to fulfill up to 50 percent of their open space mandates for new building projects. This could provide a source of private-sector funding for the County's farmland protection program.

Agriculture, lawns, and gardens are the only uses allowed without any special permits or approval in Special Flood Hazard areas, thus offering a valuable buffer for water quality protection (8.4.4). Thus, farms offer the only land use which can also provide valuable economic activity in these environmentally sensitive areas.

#### **vi. Farm Signs**

Signs advertising sales of farm products are allowed in all zoning districts without a permit, with limits on size and proximity to the roadway (11.4). Interestingly, these signs are permitted only for farms over five acres in size. With the growth of successful smaller operations targeting high-value direct marketing and pick-your-own opportunities, the County may want to consider relaxing this acreage restriction. One possible alternative is to use the state's bona fide farm definition of \$1000 of gross farm sales annually.



## DEVELOPMENT-SUPPORTED AGRICULTURE

People often see a conflict between preserving farmland and developing land for housing. Owners of farmland are presented with either keeping the land in farming or selling it off for development, while new farmers are struggling to access land. The concept of including farms in subdivisions is emerging as a new model providing real solutions with triple bottom-line results. The term that has emerged to describe this movement is Development-Supported Agriculture (DSA).

When planning for a new development, a portion of the land is set aside for agricultural production and basic infrastructure; wells, sheds, and equipment areas are established. The cost of the land and infrastructure is incorporated into the residential lot cost. The farm is then leased to a farmer, with guidance by the community. Most examples require the farm to be managed organically to avoid any risks of pesticide exposure to residents. The residents have access to fresh organically produced food, the farmer has access to affordable land and infrastructure in areas of greater population density, and the developer protects greenspace and local agriculture while gaining a valuable sales amenity.

The examples so far vary widely in their approach. On one end of the spectrum, the motivation is to save the farm and the model is more one of integrating the houses into the farm. On the other end the farm is just another amenity among many in a high-end development--more of a show piece for the neighborhood as opposed to an expression of any social or environmental value. The management structures also vary from total farmer autonomy to developer-hired staff.

Prairie Crossings in Grayslake, IL, is a good example of a group of neighbors who wanted to preserve open space and agricultural land. They formed a company with the goal of developing 677 acres responsibly, with a total of only 359 single-family homes and 36 condominiums as opposed to 2,400 homes that were planned by another developer. A certified organic farm, in operation for over a decade, provides homeowners with views over cultivated fields of vegetables and flowers and a seasonal on-site Farm Market. The largest part of the Prairie Crossing Organic Farm is Sandhill Organics, which sells produce at the on-site market as well as farmers markets in the Chicago area and a local CSA. In addition, the community has a Learning Farm, which leads outdoor, experiential, farm-based education programs. The Learning Farm has three acres of certified-organic land, with several greenhouses and a flock of free-range chickens, which serves as an outdoor classroom. The Learning Farm was developed in 2004 as a program of the Prairie Crossing Institute, the main educational, non-profit organization in Prairie Crossing Conservation Community.

<http://www.prairiecrossing.com>





## vi. Definition of Agriculture

Finally, the UDO defines agriculture for the purpose of all other uses in the ordinance (16.3). Specifically excluded from the definition is apiculture (beekeeping). It is allowed as an accessory use to households under the UDO.

On-farm livestock slaughter and food-processing, as well as farm labor housing, are not currently considered agricultural uses. Given the trends towards more labor-intensive, value-added activities that Durham's small farms and market opportunities provide, these issues will become increasingly important in the future face of Durham agriculture. The American Planning Association's *Policy Guide on Agricultural Land Preservation* includes this important policy position: "APA National and Chapters support Federal and state farm policies that maintain the economic viability of agriculture through value added products or industries which use materials from agriculture, as a means of protecting agricultural land usage."<sup>27</sup>

## c. Key Issues

Through interviews with farmers, staff, and the public, a number of concerns surfaced which merit future consideration from the Board of County Commissioners and Planning Department personnel:

- **Agricultural Zoning:** There is no specific agricultural zoning category, as distinct from rural residential. Farms may have unique needs for accessory buildings, farm worker housing, advertising, public parking and facilities, which are addressed by the City but not the County due to the expansive County agricultural exemption from zoning regulations. Davie County's *Agribusiness Use Ordinance* is a good example of a County trying to address the changing face of today's farm, with its need for new facilities and public accessibility.<sup>28</sup>
- **Housing:** Current UDO regulations require farmers to subdivide a tract when providing a house for their children or living quarters for seasonal farm workers, instead of allowing additional housing units on the same farm tract, unless the house can qualify as an accessory dwelling (small size and location restrictions). Ultimately, this will lead to the further splitting of farm units, inefficient low-density development patterns in rural areas, and the conversion of farms to other uses.
- **Accessory Buildings:** If a farm already has an accessory dwelling, it becomes much more difficult to add other accessory buildings to the farm (with new accessory dwellings prohibited). Farms need the flexibility to add new enterprises and staff to remain viable.

<sup>27</sup> <http://www.planning.org/policy/guides/adopted/agricultural.htm>

<sup>28</sup> [http://www.farmlandinfo.org/documents/31672/n\\_Davie\\_agribusiness\\_ordinance.pdf](http://www.farmlandinfo.org/documents/31672/n_Davie_agribusiness_ordinance.pdf)



- **Agricultural Priority Areas:** In 2003, Durham County established three Agricultural Priority Areas (APA)--Little River, Flat River, and Falls Lake. These areas are located outside the urban growth boundary and provide focal areas for outreach efforts and farmland protection funding. Water and sewer services may not be extended beyond the urban growth boundary so these urban services will not be extended into the APA's. Given advancing development pressures, the County could utilize these designations more strategically in prioritizing farmland preservation funding and technical assistance. Limited resources can be most effective in helping these farms on the edge between encroaching development and traditional rural land uses. Working together with the Farmland Protection Advisory Board, staff could further refine these priority areas, linking them more closely with the corresponding Voluntary Agricultural District representatives on the Farmland Protection Advisory Board and targeting educational and outreach efforts in the most important locales. The key is to avoid focusing resources on areas in which the *impermanence syndrome* has set in, with a domino effect of deteriorating farms as they await the inevitable sellout.<sup>29</sup> The Farmland Protection Advisory Board's Ranking System (see Appendix 2) provides a good roadmap to those properties most vulnerable to conversion.

The Red Mill and Hamlin Road area in eastern Durham could serve as a pilot focus area for the community input effort. With a growing nursery business, a new vineyard, and educational opportunities with the Chewning Middle School, this area combines new agricultural investment with growing development pressures. The discussion on Farming Communities in the *Recommendations* section of this report offers further guidance on prioritization.

- **Farm businesses:** Many successful farm businesses add value to the raw product before leaving the farm, but the Residential Rural Zoning category limits home-based occupations to three employees. This limits the creation of farm-based businesses such as a farmstead cheese operation.
- **Highlighting recent amendments to the UDO:** Durham has recently added new incentives for conservation subdivisions. This offers great opportunities for farms linking in to residential developments, both as amenities for homebuyers and opportunities for new farmers to get started in the County. The County should find ways to publicize these provisions to raise awareness, perhaps through a joint seminar with the Durham Regional Association of Realtors and the Farmland Preservation Advisory Board.
- **State-Level Watershed Rules:** State-level regulations on activities in the Jordan Lake watershed were adopted in November 2008. The southwest part of the County, where the impact of these rules will be greatest, is a hotbed for new horse farms and other direct market/agritourism opportunities, according to Sue Gray,

<sup>29</sup> [http://www.fundersnetwork.org/usr\\_doc/agriculture\\_paper.pdf](http://www.fundersnetwork.org/usr_doc/agriculture_paper.pdf)



local horse farm owner and head of the NC Horse Council. City and County rules may need to be changed to meet state mandates. Landowners looking to develop new enterprises need clarification on acceptable uses on those properties before making significant investment. The state is currently working on new Falls Lake rules; given that agricultural uses are currently being identified as the greatest contributor to water quality impairment in the lake, this can be expected to have a significant impact on farms in Durham County. The Soil and Water Conservation District is playing an active role in representing the concerns of the farming community; Durham agencies need to remain in close communication to represent the concerns of all parties adequately.

- **Regulatory Advocate:** Citizens interested in developing new agricultural enterprises (especially value-added and agritourism) must negotiate a maze of regulatory and permitting issues. To facilitate the process, the County should consider designating an agricultural liaison, working with the Planning Office and the Farmland Preservation Advisory Board to provide guidance on procedures for creating new farm-related enterprises. This could be one element of the responsibilities of a potential new Agricultural Economic Development Coordinator position.



## **7. FARMLAND PRESERVATION**

### **a. Conservation Partnerships**

Protection of Durham's natural resources occurs through partnerships between public and private organizations providing technical information and accessing a range of funding sources. The County is fortunate to have such a strong network of participating groups and individuals working on protecting the agricultural land base.

#### *State and Federal Government*

The **North Carolina Division of Soil and Water Conservation (DSWC)** provides technical assistance to landowners and allocates state resources to implement local conservation priorities.

The **United States Department of Agriculture's Natural Resources Conservation Service (NRCS)** plays an important role in carrying out federal programs around land and water quality improvements.

The **North Carolina Cooperative Extension Service (CES)** shares University research results and provides educational programming on a wide range of production and household management issues.

The Durham office of the **North Carolina Division of Forest Resources** helps private landowners manage their forest lands to achieve individual goals of timber production, wildlife habitat, and recreational enjoyment, while protect soil and water quality for all of the County's citizens.

The **North Carolina Department of the Environment and Natural Resources** is the state agency with primary responsibility for the stewardship of the environment. They provide technical assistance to landowners and regulatory oversight of land, air, and water resources.

#### *Durham Local Government*

The **Durham Soil and Water Conservation District (SWCD)** provides local technical assistance to landowners and administers state and federal resources to implement local conservation priorities.

The **Farmland Protection Advisory Board** administers the Voluntary Agricultural District program, shares information on local, state, and federal issues impacting agriculture, and provides feedback to the County Commission on ways to strengthen Durham's farming sector.



The **Durham Open Space and Real Estate Division** implements local conservation priorities through acquiring interest in land, seeking out sources of state and federal matching funds to preserve farmland prioritized by the Farmland Protection Advisory Board as approved by elected officials.

The **Durham Open Space and Trails Commission** provides feedback to the City Council and Board of County Commissioners on protection of land for public greenspace and recreational trails.

The **County Manager's** office plays an active role in the future of Durham agriculture, particularly as it relates to economic development. They have been leaders in the growth of the downtown farmers market and the *Piedmont Value Added Processing Center*.

**Durham Central Park** is a downtown public space that serves as a center for Durham recreational and cultural activities. It includes the Farmers Market Pavilion, SEEDS garden, and greenspace for exercise, relaxation and community events.

The **Durham Farmers Market** is a producer-only market featuring the produce and wares of more than 50 area vendors. They are open on Wednesdays and Saturdays at the Central Park Pavilion.

#### Private and Non-Profit Organizations

The **Durham Farm Bureau** represents the policy interests of farm and rural families as a local chapter of the North Carolina Farm Bureau, one of the state's largest advocacy organizations and insurance providers. They discuss key agricultural issues at monthly meetings and fund a variety of educational activities throughout the County.

**SEEDS** (South Eastern Efforts Developing Sustainable Spaces) is a non-profit community organization whose goal is to teach people to care for the earth, themselves and each other through a variety of garden-based programs

**Non-profit organizations** working on land protection in the County include the **Eno River Association, Triangle Land Conservancy, and Upper Neuse River Basin Association**. They use donations from individuals and foundations to reach out to landowners and seek public funding sources to protect important open space—stream corridors, forests, wildlife habitat, farmland and natural areas in the region. Their fundamental approach is to use ownership, easement or lease arrangements to preserve soils and protect water quality as resources for the future. The Eno River Association works on education and fundraising activities to expand public park land along the river. Triangle Land Conservancy currently owns 1236 acres in Durham including 700 acres of managed forest. TLC holds conservation easements on an additional 488 acres, 286 acres of which are working farm and forest land.





The Upper Neuse River Basin Association is a collaboration of the 8 municipalities, 6 counties, and local Soil and Water Conservation Districts that are located within the basin. The **Upper Neuse Clean Water Initiative**, led by land trusts and local governments, uses conservation easements and land acquisition to protect drinking water supplies across the region. With the support of North Carolina's natural resources trust funds; the City of Raleigh; Wake, Durham and Orange counties; and other government funding partners across the basin; the coalition has protected 4,332 acres of stream buffers in the Upper Neuse Basin since 2005. For a demonstration of how this type of effort can work with local agriculture, the Watershed Agricultural Council from New York is the premier example of local governments supporting upstream farms as the most cost-effective means of protecting water quality in the city.<sup>30</sup>

The **North Carolina Farm Transition Network** partners with organizations and professionals through educational programming and technical assistance to landowners toward the goal of keeping land in farm and forest production as it passes between generations.

#### **b. Toolbox**

There is no silver bullet for protecting farmland. With a wide variety of farms owned by an even wider variety of families, all with their varying needs and goals, an effective farmland protection strategy must offer a broad spectrum of tools that can be used to keep land in agriculture. North Carolina and Durham County offer a range of voluntary programs for landowners to ensure that their land will not be converted to non-farm uses. These programs require public- and private-sector partners to help landowners achieve their goals, and they can also help the County meet its objectives of ensuring high quality growth, protecting natural resources and supporting its agricultural businesses. Seeing where these programs are most heavily utilized also gives local government a good sense of where their stable agricultural communities are located, to steer appropriate services towards those areas, and to steer development elsewhere.

The section below introduces various farmland protection tools available to landowners. They vary in length of commitment and eligibility requirements, and many of these programs can be combined and overlapped on an individual property. What is certain is that there's something for everyone here, and participation in these programs leads to a stronger network of partners and education across the agricultural community.

#### **i. Voluntary Agricultural Districts**

Local Voluntary Agricultural District programs allow counties to form areas where commercial agriculture is encouraged and protected. Authorized by the North Carolina General



**VAD sign**

<sup>30</sup> <http://www.nycwatershed.org/>  
Public Draft 12/1/2009



Assembly in the 1985 Farmland Preservation Enabling Act<sup>31</sup> and implemented at the County level, VADs facilitate partnerships between farmers, County commissioners and land use planners. As of July 2009, two municipalities and 69 of North Carolina's 100 counties had passed farmland preservation ordinances establishing VAD programs.

Durham County first passed a Voluntary Farmland Protection Ordinance that established a local VAD Program in 1996. The Ordinance creates a 14-member Farmland Protection Advisory Board representing the geographic, demographic, and economic diversity of the agricultural sector. The board reviews applications for enrollment in the VAD program, educates the public on concerns of the farming community, and advises County commissioners and staff on projects and issues affecting local agriculture.

A revised ordinance adopted in 2003 directed the Board to include a representative from each of the five following VADs who is an active farmer or engaged in a business or activity involving farming: Flat River, Lick Creek/Falls, Little River, Cape Fear, and Eno. As of June 2009, 174 farms have enrolled 6772 acres in the Durham Voluntary Agricultural District Program, covering 26 percent of the farmland in the County.

#### **Voluntary Agricultural District Enrollment – August 2009**

<b>DISTRICT</b>	<b>Number of Farms</b>	<b>Acres</b>
Cape Fear	23	398
Eno	14	440
Falls	35	893
Flat River	76	3917
Little River	26	1171
<b>TOTAL</b>	<b>174</b>	<b>6772</b>

Durham County's VAD ordinances offer the standard set of benefits listed in the state law for landowners participating in the VADs.

1. Notification to buyers of neighboring property that they're moving into an agricultural area.
2. Abeyance of water and sewer assessments, as long as the farm remains in the program and doesn't connect to the public utility.
3. Public hearings on the condemnation of enrolled farmland.
4. A stronger protection from nuisance suits through computerized record notice to alert a person researching the title of a particular tract that such tract is located within one-half mile of a VAD.
5. Representation by the Farmland Board regarding concerns or threats to the agricultural sector.

<sup>31</sup> [http://www.ncleg.net/EnactedLegislation/Statutes/RTF/ByArticle/Chapter\\_106/Article\\_61.rtf](http://www.ncleg.net/EnactedLegislation/Statutes/RTF/ByArticle/Chapter_106/Article_61.rtf)  
Public Draft 12/1/2009



These benefits are in exchange for a voluntary commitment to restrict development on their land for a 10-year period. Landowners retain the right to withdraw from the program at any time without penalty.

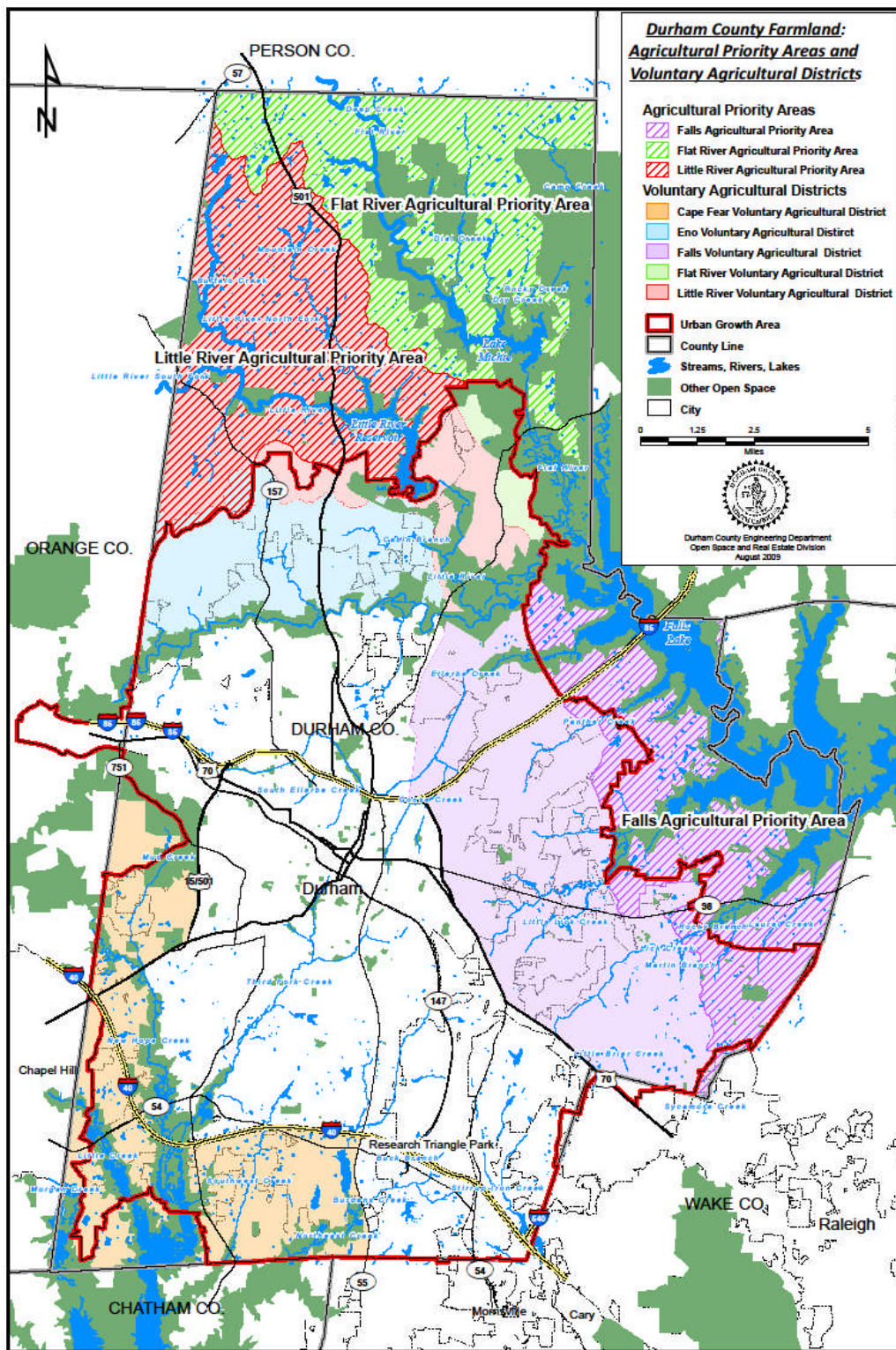
The VAD program is administered by the Durham Soil and Water Conservation District, which produces an annual report on the program and helps create a map of enrolled farms for display in County offices. This establishes a visual and quantifiable presence for local farms, raises public awareness of agricultural activity and helps leaders plan future development that will support and encourage the continued viability of local agriculture.



**FPAB member Douglas Daye in front of his VAD sign and his Durham SWCD Environmental Stewardship Recognition sign**







## ii. Enhanced Voluntary Agricultural Districts

North Carolina House Bill 607, adopted by the General Assembly in 2005, authorized a new Enhanced Voluntary Agricultural Districts (EVAD) option that counties and cities can add to their local Farmland Preservation ordinances. This EVAD option created a new category that would offer landowners an additional tier of benefits, if they were willing to waive their right to withdraw from the VAD program at any time. Those landowners who wished to retain their right for immediate withdrawal could continue under the general VAD guidelines. For those landowners willing to waive that right and enroll in the EVAD category, counties can offer an increased set of benefits:

1. Enrolled farms can receive up to 25 percent of revenue from the sale of other non-farm products, while still retaining their bona fide farming exemption from County zoning.
2. Enrolled farms would have lower cost-share requirements for NC Agricultural Conservation Cost-Share funds.
3. Counties and cities may hold all utility assessments in abeyance for any enrolled farms that choose not to connect to the utility lines.
4. State and local agencies are encouraged to tie additional future benefits and funding priority to participants in the EVAD, given their commitment to maintain their farms.
5. Municipalities are explicitly authorized to adopt their own VAD ordinances, including the enhanced VAD option
6. Cities are authorized to amend their zoning ordinances to provide greater flexibility and stability to farming operations. This can be particularly important to farms that are newly included within expanded Extra Territorial Jurisdiction lines.

Durham County has not yet adopted an Enhanced Voluntary Agricultural District program; this offers a new farmland protection tool to be considered in the near future. The County may want to consider adding additional benefits, such as increased buffer requirements on neighboring developments, additional farm buildings and uses allowable *by right*, sales/property tax reductions (such as a waiver on property taxes on farm equipment), technical assistance on legal or economic development matters, whole farm planning, carbon sequestration incentives, renewable energy assistance, etc.

As of July 2009 13 North Carolina counties had adopted EVAD ordinances.<sup>32</sup> None have included any additional benefits, beyond those explicitly authorized in the state legislation.

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<sup>32</sup> [http://www.ncadfp.org/documents/VAD\\_Map9-29-09.pdf](http://www.ncadfp.org/documents/VAD_Map9-29-09.pdf)





### iii. Agricultural Conservation Easements

An agricultural conservation easement is a voluntary deed restriction that landowners can place on their land. It permanently limits subdivision and non-agricultural development. Landowners retain ownership of the property and can continue to farm however they choose. Public access is not required, and the land can be sold or passed along to heirs. However, future owners must abide by the terms of the easement. This ensures that the land always will be available for agricultural use. Easements can be either donated by the landowner or purchased using a combination of public and private funding. The value of the easement is determined through an appraisal, which is explained in Appendix 3.

Landowners who choose to place an agricultural conservation easement on their land are known as *easement grantors*. The grantor must find a government entity, such as Durham County or the Soil and Water Conservation District, to agree to hold the easement. Conservation land trusts, such as the Triangle Land Conservancy or Ellerbe Creek Watershed Association, could also hold the easement. This organization is known as the *easement grantee or easement holder*. The easement holder has a responsibility to monitor the

property forever to be sure that the terms of the easement are fulfilled in perpetuity.



Landowners have several options for the amount of compensation received for placing an agricultural conservation easement on their farms. Conservation easements can be purchased, which in some locations is referred to the *Purchase of Agricultural Conservation Easements* (PACE) or sometimes as the *Purchase of*

*Development Rights* (PDR). Funding for these purchases typically comes from a combination of state, local and federal sources.. Demand for these funds generally outstrips supply, and Durham has shown impressive creativity and persistence in leveraging different funding sources on individual projects. Still, it can often take several years to be able to acquire easements when grants funds must be applied for, awarded, and grant conditions strictly followed.

Landowners will often sell a conservation easement on their farmland for less than the easement's fair market value in a *bargain sale*. The difference between the property's appraised fair market value and the actual easement sales price is considered a charitable donation and can receive additional benefits through the state and federal tax incentives for easement donations (see section 7.c.3.). These bargain sales allow public funds to be



spread more efficiently to protect larger chunks of farmland, while still providing liquid cash for families to meet retirement needs, provide for non-farming heirs, or reinvest in the farming operation.

Some landowners may also be in a position to donate a conservation easement on their property, which does not require the use of outside funding and ensures that their farm will never be developed. This is a potentially important option for smaller farms of less than 50 acres that may struggle to be competitive for grant funds. Durham County has received one donated conservation easements on a 32 acre farm, and the Soil and Water Conservation District received a donation of 49 acres of farmland in the Lake Michie watershed in 2004.

Since 2000, Durham County has successfully preserved 1875 acres of permanent farmland (acquired and pending projects) . These farms have a project value of over 9 million, and have leveraged over 7 million in federal grants, state grants, and landowner donations, as summarized below.

### **Durham County Agricultural Conservation Easements**

<b>Farm Easement</b>	<b>Acres Protect ed</b>	<b>Overall Project Value</b>	<b>Grant Funds</b>	<b>Landowner Donation</b>	<b>Durham County Cost</b>
2000 Herndon	55	\$750,000	\$250,000 <i>ADFPTF</i>	\$500,000	0
2002 Hill	32	\$200,000	n/a	\$200,000	0
2005 Russell Farm	161	\$511,018	\$250,010 <i>FRPP</i>	\$125,004	\$136,004
2006 and 2009 Roger Tilley Farm (Phase 1 completed, Phase II pending)	238	\$1,118,681	\$802,973 <i>FRPP and ADFPTF</i>	\$97,686	\$210,987
2007 Poole Farm Holdings llc	50.5	\$301,000	\$148,070 <i>FRPP</i>	\$75,250	\$85,680
2009 (completed and pending) Little Mountain Farm	922	\$4,101,106	\$2,265,106 <i>FRPP and CWMTF</i>	\$758,520	\$1,077,480
2009 (pending) Caywood Farm	300	\$1,350,000	\$675,000 <i>FRPP</i>	\$337,500	\$337,500
2010 (pending) Ellis Farm	70	\$435,000	\$210,000 <i>FRPP</i>	\$105,000	\$120,000
2010 (pending) Coates Farm	46.5	\$287,500	\$139,750 <i>FRPP</i>	\$69,875	\$77,875
<b>Easement Total</b>	<b>1875</b>	<b>\$9,054,305</b>	<b>\$4,740,909</b>	<b>\$2,268,835</b>	<b>\$2,045,526</b>

**Key:**      *ADFPTF: North Carolina Agricultural Development and Farmland Preservation Trust Fund*  
              *CWMTF: North Carolina Clean Water Management Trust Fund*  
              *FRPP: United States Department of Agriculture Farm and Ranchland Protection Program*



### **Dr. Marie Roberts – Bahama Land Donation**

Dr. Marie Roberts, long-time resident of Bahama in northern Durham County served as the area doctor for decades, delivering many local residents. Her family members were tobacco farmers in the Bahama community for well over a century and when she inherited the land, she kept the tradition alive by leasing the land to other farmers in the area. Her 48 acre farm is just down the road from Lake Michie and lies within the Critical Watershed boundary for Durham County's drinking water supply.

Reaching retirement age, and knowing she didn't have family to inherit the land, Dr. Roberts was adamant about never wanting her land to one day become houses and shopping malls. She approached the Durham Soil and Water Conservation District to learn what her options for the future of her farm were. The SWCD advised Dr. Roberts about conservation easements on the land, but it still did not solve the issue of who would inherit the land one day.

Based on these factors, Dr. Roberts made a unique offer to the Durham Soil and Water Conservation District, a gift of 48 acres of land on the condition it never be developed. The District agreed to the donation, and in turn worked with Dr. Roberts on donating a conservation easement on the land and had the Clean Water Management Trust Fund to hold the easement. The donated easement was a savings of approximately \$288,000 to the federal, state and/or county government.

Today the Durham SWCD maintains a leasing agreement with local farmers to continue farming the land in the fashion Dr. Roberts wanted to maintain. The District also plans to utilize the land in Conservation Education programs in the future.

#### **iv. Ranking System**

Durham County protects farms from development through a partnership between the Open Space and Real Estate Division, the Soil and Water Conservation District, the Farmland Protection Advisory Board, and the County Commissioners. Open Space Program Guidelines of 1999 asked the Farmland Board to participate in the selection and outreach efforts for the acquisition of conservation easements by the County. Durham County's Farmland Protection program is currently guided by the revised Farmland Preservation Ordinance of 2003. Among other refinements, this ordinance gave the Farmland Protection Advisory Board an official role in the acquisition of conservation easements through a ranking system to prioritize projects and an advisory role to the County Commissioners.

The Farmland Protection Advisory Board, with assistance from the Open Space and Real Estate Division and Soil and Water Conservation District, has developed a numerical ranking system to prioritize farmland protection spending and efforts. This system was developed by the Farm Board to reflect Durham County's unique values and looks at a broad range of factors related to the farm's location and how this can contribute to the long-term success of the property and the local agricultural community.



The ranking system also considers factors important to the success of farms on the federal and state farmland grant programs.<sup>33</sup>

Durham's Ranking System (see Appendix 2 for full details) reflects the multiple benefits the County receives from its farms. Major sections include the Farm and Farming Community, Environmental and Open Space Amenities, Scenic Amenities, and Historical and Cultural Amenities. The County is to be commended for including such elements as business and generational transition planning, consistency with existing comprehensive and open space plans, and cultural heritage and viewsheds. This shows the importance of assuring that the land can remain as a viable farm **and** demonstrating public benefit for protecting privately owned lands.

Scoring systems are valuable to create objective criteria for weighing worthy projects competing for limited funding, demonstrating to the public a fair and transparent process, and assuring that Durham's top candidates for matching state and federal funds will rank highly in those scoring systems.

Perhaps most importantly, the Ranking System is an opportunity to engage the farming community in determining how best to preserve an agricultural future. The Farmland Protection Advisory Board can use individual Voluntary Agricultural District meetings to circulate the current ranking system and ask for feedback on how it can be improved. With slight tweaking, landowners can develop stronger "ownership" of the program and become important advocates within their community and the broader political process.

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<sup>33</sup> <http://www.nc.nrcs.usda.gov/programs/FRPP/FRPPeligibility.html>



## **NANCY HERNDON – HERNDON HILLS FARM**

Nancy's farm has been in her family for over 250 years. The primary focus for the past 20 years has been a pick-your-own berry and grape operation started by her father. Her brother also runs a small beef cattle operation. The farm is located near Southpoint Mall in the southern part of the County and is surrounded by intense development. The development pressure has been a blessing in that she has all of the market she needs. People are surprised and happy to find her farm so close to where they live and shop. It has also been a curse in that it threatened to split the family apart over the future of the farm.

The family found a solution to this division through the sale of an agricultural conservation easement to Durham County in 2000. Nancy felt it was the stabilizing force in her family to offset the turmoil of the development pressure. The North Carolina Farmland Preservation Trust Fund provided the bulk of the money for the easement, but Nancy has great praise for the County staffers who secured the grant and coordinated the effort. She recommends the ongoing farmland protection partnership to others in the County.

Because of the lack of farmland and high development pressure, she would like to see the County focus on urban farms and provide additional support for more agricultural easements. She sees the Durham Farmers Market as an essential market outlet.

Her main threats are current financial viability and long-term transition strategies. She is not sure who will carry on the operation when she retires, but the citizens of Durham County can be assured that this land will remain forever in agricultural use, right in the heart of commercial and residential development.

### **c. Funding**

Durham County's consistent financial support for protecting farmland has reaped tremendous benefits in bringing state and federal matching dollars to the County.

#### **i. Local Funding**

Durham County has committed over \$2 million in local county funds to leverage additional funding sources for the protection of 10 farms since 2000. This has enabled allowed the county to leverage an additional \$4.7 million in grant funds and \$2.26 million in landowner bargain sales. In all, 1875 acres with a project value of over 9 million will be protected at the average cost of only \$1090 per acre to the county, a 3:1 return on the county's investment. Without the local matching funds provided, many of these farms would not have been protected.

#### **ii. State Matching Funds**

##### **1. Agricultural Development and Farmland Preservation Trust Fund**

Since North Carolina's original farmland preservation legislation was passed in 1985, the North Carolina Department of Agriculture and Consumer Services has operated the Agricultural Development and Farmland Preservation Trust Fund (ADFPTF), the primary statewide fund for the purchase of agricultural conservation easements. From 1998–2002, the ADFPTF gave out a total of \$2.4 million in five grant cycles, protecting





4,412 acres on 33 farms. During this first phase, Durham County received \$250,000 from the ADFPTF to protect the 55-acre Herndon Farm in the Cape Fear VAD.

The ADFPTF was revamped and revived in 2005. Its mandate was expanded to fund a range of conservation agreements and enterprise programs that could improve long-term viability for the farming operation, with particular emphasis on supporting local VAD programs. Five pilot projects received grants in 2006, promoting local partnerships, conservation easements and the development of VADs. The ADFPTF distributed \$8 million in 2008 and \$4 million in 2009. Local governments and nonprofit organizations are eligible to submit applications to the ADFPTF, and Durham County is currently completing a 136-acre easement project in the Flat River VAD using a combination of ADFPTF and federal funds.

## **2. Clean Water Management Trust Fund**

The Clean Water Management Trust Fund (CWMTF), funded by annual appropriations from the General Assembly, issues grants to local governments, state agencies and conservation nonprofits to help finance projects that specifically address water pollution problems. This funding can be used to purchase conservation easements on farms that serve as riparian buffers to priority waterways. The County is currently completing a 922-acre easement project in the Flat River VAD that combines CWMTF and federal funds.

### **iii. Federal Matching Funds**

The USDA Natural Resources Conservation Service (NRCS) provides matching funds (up to 50% of the value of the development rights) for the Purchase of Agricultural Conservation Easements through the federal Farm and Ranchland Protection Program (FRPP). Only parcels large enough to sustain agricultural production are eligible. With NRCS assistance, participants develop a conservation plan that outlines the management strategies that they propose to use on the enrolled land. The North Carolina NRCS accepts applications from eligible entities during an annual application period.

The FRPP program has specific funding standards. Selection criteria favor large farms (over 110 acres), while strictly limiting the number of future homesites and the amount of impervious surface. In addition, farms must have a certain portion of the farm in open land, which can make it difficult for farms with large amounts of woodland to qualify.

Durham County has held a prominent role in leveraging FRPP funding, with 315 acres of the Russell, Tilley, and Poole Farms protected. Another 1358 acres on three additional farms are currently completing transactions. The County submitted three applications in 2009, with funding approved for protection of 70 acres on the Van Ellis farm and the 46 acre Coates farm



Durham County has successfully leveraged FRPP funding to preserve significant farmland in the county, with 1291 acres of the Russell, Tilley, Poole, and Little Mountain farms protected. Another 493 acres on four additional farms are completing transactions. The county submitted three applications in 2009, with funding approved for protection of 70 acres on the Van Ellis farm and the 46 acre Coates farm.

#### **iv. Additional Funding Options**

North Carolina's counties and municipalities have a limited range of funding options available to finance farmland preservation activities. Durham's match for the state and federal programs mentioned above has been done through the annual County appropriations process. Although the County commissioners have been state leaders in supporting farmland preservation on an annual basis, the ups and downs of the budgetary process make it difficult to plan strategically. It may take 2-4 years before a project can be completed, and landowners find it difficult to make that commitment in an uncertain funding climate. A dedicated funding stream is much more effective in helping partners plan ahead and access competitive state and federal funds.

The general obligation bond is the steadiest means of funding significant conservation investments at the local level. Bond funding is also useful in providing conservation funds quickly, before land rises too much more in value. A bond must be approved by a majority of citizens at the voting booth. 85 percent of the local bond referenda for parks and conservation have passed in North Carolina in recent years (including Wake, Orange, and Guilford Counties), indicating strong citizen support for this method of financing.

As part of the County's 2010-2019 Capital Improvement Program, the County Manager has proposed a \$10 million public bond for open space and farmland preservation in 2011, as part of a \$168 million measure that would also include funding for schools, libraries, and museums. Voters in Durham County have never had the chance to express their support of conservation in this manner, but it could be a strong mandate for commissioners seeking public support for farmland protection in a tight budgetary climate.

Durham passed bond measures in 2003, 2005, and 2007 for schools, streets, sidewalks, and museums. With these outstanding bond debts, the uncertain economy, and new borrowing on the Human Services Building and Judicial Services Building, Durham leadership has expressed concern about taking on additional debt at this time. Bond measures must be repaid either through the general fund (primarily property tax) or through a dedicated revenue stream.

One new funding source permitted to counties is the Land Transfer Tax. In 2007 the North Carolina General Assembly gave all counties the authority to levy *up to* a 0.4% tax on the sale of real property (land, structures) within their boundaries. This Land Transfer Tax would allow counties to raise revenue from its citizens only in those unusual years



that one sells a house, rather than through an annual rise in the property tax rate. The land transfer tax also ties development pressure closely with the need to preserve farmland, as the amount of revenue available increases as development pressure heats up, offering both practical and philosophical benefits of this source of revenue. Prior to implementing the tax, counties must receive approval through a vote of citizens. 24 counties have placed a land transfer tax on the ballot since 2007, and all have failed to pass.

For a full discussion of financing options in North Carolina, see <http://landfortomorrow.org/stuff/contentmgr/files/8b57c8d7afceab2603a88d160af7e380/miscdocs/nclandconservationsurvey.pdf>. For an understanding of the many possible sources of income used for farmland protection around the country, see [http://farmlandinfo.org/documents/27750/PACE\\_Sources\\_of\\_Funding\\_06-11.pdf](http://farmlandinfo.org/documents/27750/PACE_Sources_of_Funding_06-11.pdf).



**King's Mill Dairy, Durham County's last remaining dairy, provides top of the line breeding stock for dairies around the county.**

## **v. Tax Policy**

### **1. Property**

*Present Use Value* tax assessment is a provision of state law which allows for agricultural and forested land to be taxed at its use value for farming, rather than its market value for development. Minimum acreage to participate is 5 acres of horticultural land, 10 acres of agricultural land, and/or 20 acres of forested land. A house must be set on a separate acre which is not part of this minimum acreage requirement. A number of interviewees expressed interest in allowing smaller farms to be eligible, but there are specific state-mandated requirements on the ownership, income and management requirements to participate in this program. Owners of agricultural land need to apply to the County tax assessor to receive this special assessment.

880 farms, covering 27,153 acres, were enrolled in the Present Use Value program in Durham County in 2008. 381 (14,656 acres) of these were classified as agriculture, 12 (219 acres) as horticulture, and 487 (12,278 acres) as forestry.

When land being taxed at present use value goes out of agricultural production, the owner is subject to a rollback penalty of the deferred taxes for the year of disqualification and the three preceding years, with interest. This penalty can be



avoided if buyers of land enrolled in present use value apply for continuation of that status within 60 days of property purchase, as long as the land continues to meet the requirements of the program.

Staff from the County tax office observe that the Present Use Value program isn't well-understood by landowners or closing attorneys. As properties change hands (whether through sale or inheritance), it is important for new owners to be familiar with specific requirements to keep land in the program, as specified by state statute. This is particularly true with forest land, which has been increasingly purchased as investment property by corporate entities, and which requires compliance with a current forest management plan.<sup>34</sup> The tax office requires properties to be requalified for the Present Use Value program every three years; when these letters aren't returned by landowners, the farm is in danger of being removed from the program. Tax office staff expresses a need for better education of landowners and professional advisors on the rules of the program; they also would encourage creative strategies for helping small acreage owners qualify.

Farmers are also entitled to a state income tax credit equal to the amount of property tax paid on farm machinery.

## **2. Sales**

Commercial farms can receive an exemption from sales tax on certain items used in their farming operations. Farm machinery, containers, tobacco-drying equipment, grain-storage facilities, fuel, potting soil, feed, seed and fertilizer are completely exempt from state and local sales taxes. To utilize the exemption, farmers must obtain an exemption number from the NC Department of Revenue.<sup>35</sup>



<sup>34</sup> [http://www.serdp-estcp.org/workshops/serps/docs/Trends\\_in\\_Southeastern\\_Forests.pdf](http://www.serdp-estcp.org/workshops/serps/docs/Trends_in_Southeastern_Forests.pdf)

<sup>35</sup> [http://www.dor.state.nc.us/taxes/sales/notice\\_exemption.html](http://www.dor.state.nc.us/taxes/sales/notice_exemption.html)







### 3. Income

Farmers report agricultural income on IRS Schedule F. An experienced agricultural tax provider can provide enormous savings by understanding deductions, depreciation, and other tools to keep taxes in check.

Landowners who *donate* (or sell for less than full value, known as a *bargain sale*) an agricultural conservation easement may receive a federal income tax charitable deduction, as well as a reduction in the value of the property for estate tax purposes. North Carolina also has a unique state conservation tax credit, available for donations of property or easements for conservation purposes.<sup>36</sup>

The federal tax code offers federal income tax credits of 20% of the cost for the rehabilitation of historic farm buildings, through a program of the National Park Service. The building must be part of a historic district or listed on the National Register of Historic Places (Durham County sites are listed in the Appendix of this report). Alternately, the parties can request local designation as an individual property that would provide them with an offset in taxes if restored. You do not need to be a National Register Property or within the district to receive a local designation. Information and application can be obtained from the NC Historic Preservation Office.<sup>37</sup>

#### d. Key Issues

- **The Farmland Preservation Ordinance is due for revision.** The changing character of local farms and the authority to provide an Enhanced Voluntary Agricultural District ordinance make Durham's six year old ordinance ready for an update.
- **Current County efforts to acquire permanent conservation easements are important and should continue.** Durham County's strong track record with state and federal matching funding sources have been built on consistent local support.
- **Successful farmland preservation programs need a dedicated funding source.** Conservation easement transactions generally take several years to complete, and a predictable stream of funds is extremely important in working with landowners and leveraging state and federal dollars.
- **Present Use Value taxation is the most important farmland protection tool in the County.** With rural land rapidly changing hands and increasing absentee ownership, the County needs to continually seek ways to educate the public on how this program works and how it benefits all citizens.
- **Communication with elected officials is crucial.** Local farmers and citizens need to let their state and federal representatives know how much they utilize the various farmland protection tools, particularly matching funding sources for the purchase of agricultural conservation easements

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<sup>36</sup> <http://www.enr.state.nc.us/conservationtaxcredit>

<sup>37</sup> <http://www.hpo.ncdcr.gov/>





**County Commission Chair Michael Page voices his support for local agriculture at the Tilley Farm at the 2009 Durham County Farmland Tour. The Tilley farm has been owned by the same family since the 1700's.**



## **8. RECOMMENDATIONS**

Interviews, public feedback, and data collection suggest a multitude of possible action areas for the public and private sectors. Recommendations are organized under the following thematic headings:

- |  |                               |
|--|-------------------------------|
| <b>a.</b> Transition                         | <b>d.</b> Marketing           |
| <b>b.</b> Farmland Protection Advisory Board | <b>e.</b> County Government   |
| <b>c.</b> Rural-Urban Connection             | <b>f.</b> Regionalism         |
|  | <b>g.</b> Farming Communities |

Each recommendation includes a suggested lead implementer, who would be responsible to assure that a strategic approach is established and milestones are achieved. However, all of these initiatives will succeed only with the cooperation of multiple partners. Potential partners and a priority rating have been suggested and can be found listed under each recommendation. Keys to the partner abbreviation and implementation can be found below:

### **PARTNER ABBREVIATIONS**

AEDC	Agricultural Economic Development Coordinator
BOCC	Board of County Commissioners
CCP	City-County Planning Office
CES	Cooperative Extension Service
CM	County Manager's Office
CVB	Convention and Visitors Bureau
DAC	Durham Arts Council
DCP	Durham Central Park
DFM	Durham Farmers Market
DFR	Division of Forest Resources
FB	Farm Bureau
FPAB	Farmland Protection Advisory Board
IFS	Interfaith Food Shuttle
NCFTN	North Carolina Farm Transition Network
OSRE	Open Space & Real Estate Division
SEEDS	South Eastern Efforts Developing Sustainable Spaces
SWCD	Soil and Water Conservation District

### **IMPLEMENTATION TIMELINE KEY**

- |          |   |
|----------|---|
| <b>1</b> | Can be done within next 18 months. Minimal financial cost, with partners ready to collaborate.  |
| <b>2</b> | Can be achieved in 2-3 years. Requires a longer time frame, organizational commitment, and perhaps additional funding.  |
| <b>3</b> | Long-term goal over next 5 years. Significant new initiative that will require relationship-building, development of grassroots support, and outside funding. |



**a. Transition**

Durham agriculture is full of transitions. The traditional tobacco and field crop landscape is now filling with houses, horses, and horticulture. Agricultural activity is no longer based primarily on commodities sold at a world market price and shipped to a faceless consumer across the globe. Now, Durham's part-time farmer may be selling organic vegetables or goat cheese to a neighbor down the road or a coworker at the Farmers Market. This is indisputably Durham's competitive advantage: someone can always grow it cheaper, but no one can grow it more locally. The traditional farm leadership in the county is aging, and the future of agriculture will depend on new farmers and absentee landowners seeking out innovative opportunities.

- 1. The Durham County Farm Bureau will cultivate new farmers for leadership opportunities within the Farmland Protection Advisory Board, Soil and Water Conservation District, Farm Bureau, and other agricultural organizations.**

Traditional field crop growers and part-time specialty farmers bring varied perspectives and knowledge. Farming of the future will not likely include many full-time farmers, but Durham's agricultural history has long included alternate sources of income to support farming lifestyles. Combining the knowledge and experience of lifetime farmers with the enthusiasm and marketing savvy of value-added newcomers will yield a powerful force for the future.

**Partners: FPAB, SEEDS, CES, SWCD**

**Priority: 1**

- 2. The Farmland Protection Advisory Board will identify and communicate with landowning families to assist in their process of planning for the future of their farms.** FPAB will present a series of workshops for the farming community to provide information about legal, financial and marketing opportunities. The *North Carolina Farm Transition Network* (NCFTN), located nearby in Hillsborough, specializes in this area and can help Durham create a targeted educational program based on their successful *Planning the Future of Your Farm* series.<sup>38</sup>

**Partners: NCFTN, SWCD**

**Priority: 1**

- 3. The Farmland Protection Advisory Board will perform outreach to assemble and facilitate training of a body of professionals in the particular needs and opportunities associated with the ownership of rural land.** Attorneys, accountants, and financial advisors will be providing important guidance to families making difficult long-term decisions, and ensuring their proper knowledge of agricultural tax issues, conservation programs, and land protection opportunities. This offers the best hope that families utilize all available incentives to keep their land in farm use. NCFTN, NC State University, and the NC Farm Bureau have

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<sup>38</sup> <http://www.ncftn.org/planning/index.html>.



collaborated on continuing education courses around the state that tackle thorny technical issues.<sup>39</sup>

**Partners: NCFTN, SWCD**

**Priority: 1**

4. **The Farmland Protection Advisory Board with assistance from the Agricultural Economic Development Coordinator will link prospective new farmers with landowners who would like to see their farms better utilized to help beginners start farming at an affordable cost.** Many states have developed successful linking programs allowing new farmers to apprentice with experienced growers, and NCFTN offers a Land Link website for North Carolinians. However, these introductions tend to work best through individual connections rather than a centralized electronic system. Members of the Farmland Protection Advisory Board should make it a priority to reach out to their neighbors and figure out who might be open to a newcomer on their land and what it would take to make them successful.

**Partners: CES, IFS, NCFTN, SWCD, FB**

**Priority: 2**

**b. Farmland Protection Advisory Board**

The FPAB has been given the authority and responsibility from the Durham County Commissioners to “foster the wise use of our farmland resources by working with farmers, the community, government entities and agencies and other resources to identify and implement strategies for the preservation and enhancement of our farming community while protecting the land and soils for future generations.” This broad mandate reflects the great responsibility and opportunity bestowed on FPAB members by the citizens of the county. The FPAB needs to be creative and forward-thinking, challenging the farming community, general public and county leadership to enhance the transition of Durham agriculture to the next generation.

1. **The Farmland Protection Advisory Board will develop an updated farmland preservation ordinance that may include the Enhanced Voluntary Agricultural District option.** The EVAD program allows landowners to commit to keeping their land in agriculture for 10 years, in exchange for a set of benefits to be determined by the county. This allows the FPAB to recommend a new set of incentives that strengthen the partnership between farmers and the county, while giving landowners an additional protection option. FPAB will schedule outreach meetings in various parts of the county to elicit public feedback on the proper set of incentives for the updated ordinance. They should use the representatives from each district to understand more specific needs at various locations around the county. **Partners: CCP, BOCC, OSRE, SWCD**  
**Priority: 1**

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<sup>39</sup> <http://www.ncftn.org/RLU/index.html>.





2. **The Farmland Protection Advisory Board will broaden board membership and attempt to fill all available slots.** It is important to gain the perspectives of new farmers, agricultural supply providers, youth, educators, realtors, alternative enterprises, etc. This offers a prime opportunity for the cultivation of new agricultural leaders. The board should also include forestry expertise as part of providing for the full range of needs of the rural landowner.  
**Partners: SWCD, DFR, CES**  
**Priority: 1**

c. **The Rural-Urban Connection**

Durham is an intimate county. With only a single municipality, the city supports the farms, and the farms support the city. Durham's farmers are so small in numbers that they need the understanding and purchasing power of city dwellers to survive, while urban residents depend on the fresh food, water quality protection, open space, and governmental fiscal savings that the farms bring.

1. **The Cooperative Extension Service will support expanded urban agriculture opportunities.** Durham's vibrant community gardening scene is unique in North Carolina and offers a wonderful venue for fresh food, entrepreneurial training, and brightening up many neighborhoods. Several buyers mentioned the lack of winter-time locally grown produce; this is an opportunity waiting to be seized by entrepreneurial small-scale farmers. **Partners: SEEDS, AEDC**  
**Priority: 2**
2. **The Cooperative Extension Service will explore the possibility of Durham becoming a Regional Outreach Training Center for urban agriculture.** The infrastructure and interest already exists through SEEDS and other community gardening organizations.  
**Partners: SEEDS, AEDC**  
**Priority: 3**
3. **The Farmland Protection Advisory Board will expand linkages between farming generations.** SEEDS does great work teaching kids to grow and sell food. There is a wealth of knowledge in rural residents who have grown food all their lives. The Farmland Protection Advisory Board should seek out opportunities to share the experience of the retiring generation of farmers with this next wave of horticultural enthusiasts by creating a mentorship<sup>40</sup> program that matches older farmers and entrepreneurs with enthusiastic urban, suburban and rural youth.  
**Partners: FB, SWCD, AEDC, CES**  
**Priority: 2**

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<sup>40</sup> A good example of such a mentorship program is Score: <http://www.score.org/index.html>  
Public Draft 12/1/2009



4. **The Cooperative Extension Service with the support from the Horticulture, 4-H and Livestock Extension Agents will support and promote agricultural 4-H programs.** Financial and technical assistance are a worthy investment in the next generation of farmers and a stronger urban understanding of rural communities. Samantha Gasson's 4-H program is doing a superb job of private fundraising to support their calf-raising endeavors, and Durham Cooperative Extension Service should become a more active partner in this and other grassroots efforts (p 40).

**Partners: FB**

**Priority: 2**

5. **The Farmland Protection Advisory Board will advocate for the expansion of agricultural education in the schools.** Such a program would incorporate forestry education into environmental science classes and expanding the county's sole remaining agriculture (ag) education program at Jordan High to other schools in the system and/or adding "Ag After School" programs. Farms offer an extensive range of educational opportunities in biology, genetics, and environmental science, but these connections remain largely untapped. Programs such as Mike Dupree's school greenhouse initiative needs funding support (p 39). The majority of Durham's remaining farmland is in the northern part of the county, yet there is no agricultural education program at Northern High School. The Appalachian Sustainable Agriculture Program's *Growing Minds* program is an example of a comprehensive approach to teaching our kids about where their food comes from and how to grow and prepare healthy meals.<sup>41</sup>

**Partners: FB, SWCD, CES**

**Priority: 1**

#### d. Marketing

With the relatively affluent and well-educated Triangle population, multitude of fine restaurants, and strong awareness of local food, a gold mine of opportunity awaits the entrepreneurially minded Durham farmer. The recent Farm-to-Fork fundraiser in Orange County, which matched area chefs with local farms, sold out its \$50 tickets, creating a vibrant scalpers market on Craigslist in search of farm-fresh creations.

1. **The Farmland Protection Advisory Board will promote local farms as an important part of its community character.** Farm tours modeled after the Carolina Farm Stewardship Association's annual spring tours, maps of local pick-your-own and agritourism operations, and joint promotional efforts with the Convention and Visitors Bureau (see Asheville's Foodtopia campaign<sup>42</sup>): will all raise public awareness of the diversity of local farms and create new loyal customers.

**Partners: CES, CVB, SWCD, AEDC**

**Priority: 2**

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<sup>41</sup> <http://growing-minds.org/>

<sup>42</sup> <http://www.exploreasheville.com/foodtopia/what-is-foodtopia/index.aspx>



2. **The Board of County Commissioners with assistance from the County Manager's Office will explore the establishment of purchasing programs by local governing bodies, such as the schools system, from local suppliers to promote local food production.** <sup>43</sup> With a phased-in mandate for government institutions, Durham could encourage private enterprises to follow suit and create a consistent demand level for local farmers.  
**Partners: AEDC, CES, FPAB**  
**Priority: 3**
3. **The Cooperative Extension Service will facilitate the development of new Community Supported Agriculture (CSA) connections.** With its large and community-spirited urban population, Durham could be a hotbed for CSAs, in which consumers buy a share of a farm's harvest, receiving a weekly box of fresh produce, flowers, eggs, and meat. Community centers, churches, hospitals, and large employers could serve as advertising locations and drop-off points for farms looking for a convenient and consistent customer base. The current CSA market is supplied by farmers outside Durham County. An expanded CSA program offers a new market opportunity for Durham farmers.  
**Partners: FPAB, AEDC**  
**Priority: 3**
4. **The Cooperative Extension Service, with assistance from the Livestock Extension Agent, will focus public and private efforts on developing locally grown meats.** Currently, no one is marketing Durham-raised meats. There is enormous demand for grass-fed, natural, and organic beef, lamb, goat, pork, and chicken, for health- and quality-conscious consumers. Pastured livestock operations lend themselves well to moderate-sized acreage and can fit in with rapidly developing areas, as they don't require huge operating investment. With processing facilities not too far away in Yanceyville and Siler City, local growers have proximity to the infrastructure and market needed for success.  
**Partners: FPAB, AEDC**  
**Priority: 2**
5. **The Farmland Protection Advisory Board will link Durham's vibrant arts community with its growing farms.** Old tobacco barns could be renovated as studios, farmers could be paired with artists for creative endeavors, and seasonal tours through the countryside would offer opportunities for increased sales for both.  
**Partners: DCP, DAC**  
**Priority: 3**

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<sup>43</sup> See page 32 of plan  
*Public Draft 12/1/2009*



6. **The Durham Farmers Market Board will highlight the successes of the Durham Farmers Market and increase the Durham farmer presence.** Expand activities with local chefs and community groups to grow the customer base. The booming growth of this market is the talk of the Triangle. Now it just needs more vendors who live in Durham County, who can tell the story of local agriculture to citizens and media.  
**Partners: FPAB, CES**  
**Priority: 1**

e. **County Government**

Durham's civil servants collaborate very enthusiastically for the preservation of farmland and promotion of profitable opportunities. This study has highlighted several ways local government could enhance this cooperation and the future of agriculture.  
*(reference, section 7.2.3 of the adopted Durham Comprehensive Plan)*

1. **The Board of County Commissioners will continue current county efforts to acquire permanent conservation easements from interested farmers.**  
Permanent easements are an important tool to help ensure the long term availability of farmland in Durham. The current county policy of aggressively seeking grant funds has made this a very cost effective program.  
**Partners: OSRE, FPAB**  
**Priority: 1**
2. **The Board of County Commissioners, with assistance from the County Manager's Office will work create a dedicated funding source for the protection of farmland and open space.** With rising real estate values, a bond measure is a particularly cost-effective means of protecting land quickly. There are a number of possible funding sources that could be used to pay off such a bond (see *Farmland Preservation* chapter for options).  
**Partners: FPAB, SWCD, OSRE**  
**Priority: 2**
3. **The Board of County Commissioners with assistance from the County Manager's Office will urge the North Carolina Cooperative Extension Service to create a new staff position to support livestock, forage, field crop production and 4H in Durham County.** The closest livestock extension agent was based in Orange County and has recently retired, leaving a gap in farmer support at a time when livestock production is increasing. The recent retirement of the regional livestock extension agent supporting Durham's farmers will increase the challenge for the development of new operations, unless Durham contributes financially to this position once again.  
**Partners: CES, FPAB, FB**  
**Priority: 2**



4. **The Board of County Commissioners with assistance from the County Manager's Office will create a new staff position(s) to support agricultural economic development opportunities.** This could be a full-time or part time employee. In other counties around the country, this position is housed her in Cooperative Extension, Economic Development, the Soil and Water Conservation District, or a combination. In Polk County, the position reports to the County Manager, with direction and oversight on plan and program development and implementation provided by the Farmland Protection Advisory Board. The ideal candidate would have experience in business development and agricultural production. The FPAB shall aggressively pursue grant opportunities to assist with the cost of the initial year(s) of position employment. (see p 43-44 for details)  
**Partners: FPAB, SWCD, OSRE, CES**  
**Priority: 2**
5. **City-County Planning Office will consider modifications to the Unified Development Ordinance to improve the flexibility for bona fide agriculture to accommodate the new types of farms that are emerging.** Text amendments to allow increased farm buildings and employees for farm-related enterprises and support more urban agriculture are good first steps. An entirely new Agricultural Zoning Classification could be created that encourages and supports these activities. The Limited Agriculture Ordinance allowing poultry and beekeeping inside the city limits could be expanded to cover other farming enterprises.  
**Partners: CM, FPAB**  
**Priority: 2**
6. **The Farmland Protection Advisory Board with assistance from the Agricultural Economic Development Coordinator will work to establish a local Food Policy Council, which could identify gaps in the local food chain and focus efforts on educating citizens and farmers on how to be part of a safe and secure food system.** The NC General Assembly has recently adopted legislation establishing a statewide Food Policy Council, which could provide support and networking opportunities for a local version.  
**Partners: CES, CM**  
**Priority: 3**
7. **Cooperative Extension Service will coordinate and aggregate to help small farmers achieve economies of scale.** Durham's relatively small growers face an uphill battle in buying large lots of supplies, recycling agricultural plastic, consolidating products for shipments to institutional buyers, and creating a local identity. Local economic development and business development assistance could create a level playing field to help local growers compete with larger competition from the outside.  
**Partners: AEDC, FPAB**  
**Priority: 3**





8. **City-County Planning Office will explore the feasibility of a Transfer of Development Rights program.** Efforts to spur investment in the central urban core and stimulate development around the proposed new rail stations during challenging budgetary times lend themselves well to this privately funded planning mechanism.

**Partners: CM, FPAB**

**Priority: 3**

f. **Regionalism**

Durham is blessed to be in an area with so many agricultural amenities and motivated consumers, but faces the challenge of strong competition from farmers from other counties. The Triangle is a region with a clearly defined identity, and there are existing structures that could serve as a starting point for regional collaboration. The Triangle J Council of Governments and the NC Department of the Environment and Natural Resources are actively engaged in regional planning work, and Durham's representatives on any regional plans should have a strong understanding of the needs of the agricultural community. Durham should work closely with adjacent counties and municipalities to identify regulatory barriers (such as signage) which impact operations of local farmers. Other surrounding counties are also working on these farmland protection plans; Durham could be a leader in convening neighbors to discuss synergies and economies of scale in promoting the future of agriculture.

1. **The Soil and Water Conservation District will assure that all plans and rules surrounding water protection emphasize the needs and importance of local farms.** Durham's watersheds are under statewide jurisdiction. The farm community should actively participate in the creation and implementation of land use rules as they affect drinking water and recreational priorities for other counties. The County could also play a role here, both in advocating for farm friendly rules and in creating local rules that work in conjunction with state rules to provide balanced consideration to any additional burden on Durham County agriculture.

**Partners: CM, CCP**

**Priority: 1**

2. **The Board of County Commissioners with assistance from the County Manager's Office will continue support and participation in the evolution of the *Piedmont Food & Agricultural Processing Center*.** Upon completion, use of this facility by Durham County will be highly beneficial.

**Partners: CES, FB, FPAB**

**Priority: 2**



3. **The Farmland Protection Advisory Board with assistance from the Agricultural Economic Development Coordinator will create a “New Farmers Guide.”** Durham agricultural support personnel should be familiar with the wonderful range of services available for new farmers in surrounding counties and be able to refer new growers. Examples of such resources include Breeze Farm Incubator, the Sustainable Agriculture Program at Central Carolina Community College, Growing Small Farms Extension programs, the Center for Environmental Farming Systems, Research and Extension at NC State, Carolina Farm Stewardship Association and American Livestock Breeds Conservancy, NC Farm Transition Network, nearby value-added processing facilities and agricultural supply providers.  
**Partners: CES, FB, SWCD**  
**Priority: 2**
4. **The Interfaith Food Shuttle will develop a local food distribution facility to receive the production of the many small farmers in the area and help distribute food to those in need.** This facility could be used to coordinate collection and provision of healthy food for low-income families and individuals.  
**Partners: FPAB, AEDC, BOCC**  
**Priority: 3**

**g. Farming Communities**

Farmers need a community of support and infrastructure to survive: equipment sales and repair, seeds and inputs, neighbors and trusted advisors.

1. **The Farmland Protection Advisory Board will identify Durham’s unique and diverse farming heritage, such as minority and century farms, and schedule activities to increase this highly localized identity.** This would help newcomers become integrated into rural areas and find ways to share resources and expertise with longer standing farmers. Small area meetings within each Voluntary Agricultural District could identify their farming resources (stores, experienced farmers, custom service providers, marketing outlets, rentable land) to determine the future viability of farming in the area, as well as what the neighborhood needs to make farming successful.  
**Partners: FB, SWCD**  
**Priority: 1**
2. **The Farmland Protection Advisory Board will prioritize the preservation of our existing farming communities.** Proximity to other farms and agricultural suppliers is a strong predictor of long-term success and stability of a farm.  
**Partners: OSRE**  
**Priority: 2**



3. **The Farmland Protection Advisory Board will incorporate forestry education and needs into farmland protection strategies.** Forest practices in the county face the challenge of small lots which are difficult for management and attracting timber harvest. The annual landowners' summit should include expanded forest management education, and any additional outreach activities should emphasize potential profitability and natural resource benefits from timber harvest and timber stand improvement. The Farmland Protection Advisory Board should seek a member with strong forestry interests and knowledge.

**Partners: DFR, OSRE**

**Priority: 1**



## **9. IMPLEMENTATION MATRIX**

This matrix organizes the recommendations by key implementer, with suggested implementation partners and priority categories. Successful accomplishments will depend on the creation of a strategy and work plan to carry out each recommendation, with target milestones and a commitment to revisit progress on a regular basis. A strong collaborative effort will be needed to fit these activities into already busy work agendas; the best way to achieve this will be to solicit grassroots support and volunteer assistance from citizens and community groups.

### **PARTNER ABBREVIATIONS**

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SEEDS	South Eastern Efforts Developing Sustainable Spaces
SWCD	Soil and Water Conservation District

### **IMPLEMENTATION TIMELINE KEY**

- 1** Can be done within next 18 months. Minimal financial cost, with partners ready to collaborate.
- 2** Can be achieved in 2-3 years. Requires a longer time frame, organizational commitment, and perhaps additional funding.
- 3** Long-term goal over next 5 years. Significant new initiative that will require relationship-building, development of grassroots support, and outside funding.



Durham County ADFP Implementation Matrix – sorted by Implementer				
Lead Implementer	Recommendation	Number	Partners	Timeline Priority
City-County Planning Office	UDO clarifications	e.5.	CM, FPAB	2
	Explore Transfer of Development Rights	e.8.	CM, FPAB	3
Cooperative Extension Service	Expand urban agriculture	c.1.	SEEDS, ADEC	2
	Urban ag training center	c.2.	SEEDS, AEDC	3
	Agricultural 4-H programs	c.4.	FB	2
	CSA expansion	d.3.	FPAB, AEDC	3
	Locally grown meats	d.4.	FPAB, AEDC	2
	Coordinate small farmers	e.7.	AEDC, FPAB	3
BOCC & County Manager's Office	Local food purchasing program	d.2.	AEDC, CES, FPAB	3
	Conservation easements	e.1.	OSRE, FPAB	1
	Dedicated funding source for farmland preservation	e.2.	FPAB, SWCD, OSRE	2
	CES Livestock/Crops Agent	e.3.	CES, FPAB, FB	2
	Agricultural Econ Development Coordinator	e.4.	FPAB, SWCD, OSRE, CES	2
	Support Piedmont Value-Added Center	f.2.	CES, FB, FPAB	2
Durham Farmer's Market	Highlight Durham farmers market	d.6.	FPAB, CES	1
Durham Farm Bureau	New farm leadership	a.1.	FPAB, SEEDS, CES, SWCD	1
Interfaith Food Shuttle	Food distribution facility	f.4.	FPAB, AEDC, BOCC	3
Soil and Water Conservation District	Represent farmers in regional planning	f.1.	CM, CCP	1





Durham Co ADFP Implementation Matrix (continued)				
Lead Implementer	Recommendation	Number	Partners	Timeline Priority
Farmland Protection Advisory Board	Help landowning families transition	a.2.	NCFTN, SWCD	1
	Outreach to professional advisors	a.3.	NCFTN, SWCD	1
	Link landowners with new farmers	a.4.	CES, IFS, NCFTN, SWCD, FB	2
	Amend farmland preservation ordinance	b.1.	CCP, BOCC, OSRE, SWCD	1
	Broaden VAD board membership	b.2.	SWCD, DFR, CES	1
	Expand generational linkages	c.3.	FB, SWCD, AEDC, CES	2
	Expand agricultural education	c.5.	FB, SWCD, CES	1
	Promote local farms	d.1.	CES, CVB, SWCD, AEDC	2
	Link artists with farms	d.5.	DCP, DAC	3
	Establish Food Policy Council	e.6.	CES, CM	3
	Create “New Farmers Guide”	f.3.	CES, FB, SWCD	2
	Farming community ID & outreach	g.1.	FB, SWCD	1
	Tie farmland preservation funding to key communities	g.2.	OSRE	2
	Emphasize forestry needs	g.3.	DFR, OSRE	1



## 10. IMPLEMENTATION TIMELINE, Priority 1-3

Priority 1 - can be done within next 18 months		
Minimal financial cost, with partners ready to collaborate		
Number	Recommendation	Lead Implementer
a.1.	New farm leadership	FB
a.2.	Help landowning families transition	FPAB
a.3.	Outreach to professional advisors	FPAB
b.1.	Amend farmland preservation ordinance	FPAB
b.2.	Broaden VAD board membership	FPAB
c.5.	Expand agricultural education	FPAB
d.6.	Highlight Durham farmers market	DFM
e.1.	Conservation easements	BOCC/CM
f.1.	Represent farmers in regional planning	SWCD
g.1.	Farming community ID & outreach	FPAB
g.3.	Emphasize forestry needs	FPAB

### Key:

AEDC	Agricultural Economic Development Coordinator	DFR	Division of Forest Resources
BOCC	Board of County Commissioners	FB	Farm Bureau
CCP	City-County Planning Office	FPAB	Farmland Protection Advisory Board
CES	Cooperative Extension Service	IFS	Interfaith Food Shuttle
CM	County Manager's Office	NCFTN	North Carolina Farm Transition Network
CVB	Convention and Visitors Bureau	OSRE	Open Space & Real Estate Division
DAC	Durham Arts Council	SEEDS	South Eastern Efforts Developing Sustainable Spaces
DCP	Durham Central Park	SWCD	Soil and Water Conservation District
DFM	Durham Farmers Market		



Priority 2 - Can be done within 2-3 years		
Requires longer timeframe, organizational commitment and perhaps additional funding		
Number	Recommendation	Lead Implementer
a.4.	Link landowners with new farmers	FPAB
c.1.	Expand urban agriculture	CES
c.3.	Expand generational linkages	FPAB
c.4.	Agricultural 4-H programs	CES
d.1.	Promote local farms	FPAB
d.4.	Locally grown meats	CES
e.2.	Dedicated funding source for farmland preservation	BOCC/CM
e.3.	CES Livestock/Crops Agent	BOCC/CM
e.4.	Agricultural Econ Development Coordinator	BOCC/CM
e.5.	UDO clarifications	CCP
f.2.	Support Piedmont Value-Added Center	BOCC/CM
f.3.	Create “New & Existing Farmers Guide”	FPAB
g.2.	Tie farmland preservation funding to key communities	FPAB

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Priority 3 - Long-term goal over next 5 years		
Significant new initiative that will require relationship-building, development of grassroots support and outside funding		
Number	Recommendation	Lead Implementer
c.2.	Urban ag training center	CES
d.3.	CSA expansion	CES
d.2.	Local food purchasing program	BOCC/CM
d.5.	Link artists with farms	FPAB
e.6.	Establish Food Policy Council	FPAB
e.7.	Coordinate small farmers	CES
e.8.	Explore Transfer of Development Rights	CCP
f.4.	Food distribution facility	IFS

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## **II. CONCLUSIONS**

This report has documented a multitude of issues surrounding the past, present, and future of Durham County agriculture. Farmers, landowners and public- and private-sector individuals with an interest in the future of local farming face a broad range of challenges and opportunities. Durham's traditional crops and farmers are disappearing, and the County must quickly replace them with new growers and enterprises. With such a strong demand for locally grown foods, Durham sits in a strong position to cultivate its next generation of farmers, but a successful farm requires support infrastructure. Of particular importance to these new farmers is production and business development assistance.

The County has a long history of, and firm policy guidance for, protecting farmland. The local partnership working together on farmland protection is a statewide leader in leveraging funds from multiple state and federal sources, but in the next few years, budget shortfalls on all levels will make it difficult to maintain momentum. Durham's Urban Growth Boundary has stemmed the tide of development and farmland conversion in important agricultural areas, and the increasing emphasis on water quality protection will likely slow future growth. The City-County Planning Department and Open Space and Real Estate Division have successfully solicited local input through area open space plans, and they have shown responsiveness to needed changes in local ordinances and regulations as they impact farmland. It is incumbent upon farmers to be proactive in identifying potential barriers to success and working constructively with County staff to address them.

It is a cliché to say that this report won't help anyone if it sits on a shelf and collects dust, but the real challenge will come in moving these ideas forward amidst other busy schedules. The implementation matrix is designed to outline specific responsible entities and partners, and it is important to continually review progress and barriers. An annual progress report can be very valuable in this process.

The most important outcome of this report, however, will not be the particular recommendations or statistics, but rather the cooperation it can help create between offices, agencies, organizations, and individuals. Successful farmland protection and agricultural development in Durham County will depend on the collaboration of nontraditional partners, pursuing common goals and utilizing differing strengths to move the sector forward. Interested groups should think in terms of crossing lines: traditional and new, urban and rural, young and old, conventional and organic, white and black and Latino. Local agriculturalists must get out and talk to folks they never have before and try to learn something new. There are too few farmers and too few acres remaining to stay in separate boxes. If the whole can be greater than the sum of the parts, Durham agriculture can continue to enrich the County's diverse history by enhancing the quality of life for all of its citizens.





## APPENDICES

- Appendix 1: Durham Farmland Preservation Ordinance, Article IV
- Appendix 2: Durham Farmland Ranking System
- Appendix 3: Determining the Value of a Conservation Easement
- Appendix 4: Durham County Listings in the *National Register of Historic Places*
- Appendix 5: List of Interviews and Public Meetings
- Appendix 6: Authority for Public Action



Growing the next crop of Durham farmers

