

Agricultural Preservation Strategy Paper



Chicago Metropolitan Agency for Planning
July 2008

Table of Contents

Introduction and Relevance to Northeastern Illinois 2
 Agricultural Preservation and Regional Planning 3
Overview of Existing Conditions 3
 The Agricultural Economy in Illinois 4
 The Role of Policy for Agricultural Preservation 6
 Local Efforts 7
Trends in the Region 8
 The Housing Boom’s Impact on Farmland 8
 The Lake County Experience 9
 Regional Trends 9
 Regional Projections 10
Factors affecting Agricultural Preservation 11
 Environment 11
 Economy 11
 Land Use 13
Conclusion 15
Bibliography 15
Bibliography 16

Tables

Table 1. Illinois Commodities 4
Table 2. Population and Building Permits by County 8
Table 3. Farmland Acreage Loss (1997 – 2002) 10
Table 4. 2030 Population and Employment Forecasts 10
Table 5. The Cost of Community Services for 3 Dane County Townships 14

Figures

Figure 1. Number of farms in northeastern Illinois 5
Figure 2. Total Acreage of Farmland in northeastern Illinois 5
Figure 3. Lake County Change in Land Use (2000-2005) 9

Intro Paragraph

As the threats of food security and global climate change gain momentum, agricultural preservation is gaining popularity, even in headlines of major newspapers. The objective of this strategy paper is to outline the importance of agriculture to northeastern Illinois and the costs and benefits associated with preservation.

The Chicago Metropolitan Agency for Planning (CMAP) is responsible for developing *GO TO 2040*, a long-range plan for the region's future. This paper is meant to explore the issue of agricultural preservation to support CMAP's approach to this important topic in the *GO TO 2040* plan.

Introduction and Relevance to Northeastern Illinois

Agriculture continues to have relevance and importance in the United States as an economic activity and way of life. The Connecticut Department of Agriculture defines 'agriculture' and 'farming' as including: "the cultivation of the soil, dairying, forestry, raising or harvesting any agricultural or horticultural commodity, including the raising, shearing, feeding, caring for, training and management of livestock and the raising or harvesting of oysters, clams, mussels, other molluscan shellfish or fish." The preservation of agriculture is not only a land use choice; it is the preservation of an interconnected system that relates to the environment, the people, and the economy.

At the calculation of the 2002 Agricultural Census, Illinois had 27.3 million acres of farmland. In 1974, total acreage was approximately 1.8 million acres greater (USDA NASS). This translates to an average loss of over 63,000 acres of farmland each year, for the last 28 years. Of the 24 million acres dedicated to growing crops, 89% is considered prime farmland--placing Illinois in the top three states for total acreage of prime farmland (USDA NASS). According to the Illinois Department of Agriculture, Illinois was ranked second in terms of exports of agricultural products, averaging \$4 billion worth of goods shipped to other countries each year (Illinois Department of Agriculture, 2004). Illinois' agricultural contribution to the state and national economy, paired with the continual loss of agricultural land, is a strong motive to increase preservation efforts.

Several other trends have sparked further interest in agricultural preservation: continued development of greenfields, a major increase in biofuel production, recent food cost increases, and growing demand for organic and locally produced food. Development is occurring outside of city and suburban limits at rapid rates, encroaching upon agricultural land, and without strong incentives from government to continue farming, it is in the interest of many farmers to sell their land for development. Additionally, farmers face competition for space with the infrastructure that new growth requires.

In January of 2007, President George W. Bush announced that by 2017, the United States' production of ethanol should reach 35 billion gallons, and increase to 60 billion gallons by 2030 (The National Academies, 2007); the anticipation has driven major spikes in the demand for corn and other products such as wheat--creating new opportunities and challenges for the preservation of agricultural land, as well as contributing to food price increases. Also, more attention to nutrition and carbon footprints has broadened the market for organic and local food, shifting some traditional farming to more specialized food markets.

Agricultural preservation is significant at the local, state, federal, and even global levels. This strategy paper explores the challenges and opportunities that preservation offers for the region. First, this paper will define agricultural preservation. Second, it will identify the existing conditions of the agricultural sector, most importantly the state's inventory of land, current policies, and the level of commodity production. Third, this paper seeks to measure the effects of preserving agricultural land on the environment, economy, and land use. Finally, there are case studies, highlights from the region, and a summary of regional interviews grouped as appendices.

Agricultural Preservation and Regional Planning

Previously, the topic of agricultural preservation was addressed by the Northeastern Illinois Planning Commission (NIPC) in its 2030 Framework Plan. NIPC concluded that farmland preservation is a priority for the region and is “strongly linked to the principles of strengthening centers and corridors” (NIPC 2005).

NIPC Recommendations for Farmland Preservation, 2040 Regional Framework Plan (2005)

1. Recognize the Economic Value of Farmland
 - a. Review Zoning Codes to ensure compatibility with farmland preservation
2. Implement Farmland Preservation Measures
 - a. Create Agricultural Districts
 - b. Plan and zone for varied and flexible residential development within already developed areas to reduce pressure to develop on farmland
 - c. Adopt right-to-farm legislation
 - d. Implement a farmland conversion fee
 - e. Implement design principles to sensitively integrate development with agricultural preservation
3. Examine the Public Costs of Farmland Conversion Prior to Development
 - a. Purchase land or use transfer development rights to acquire conservation easements to preserve farmland
 - b. Identify and map agricultural soils and resources to identify priority protection areas
 - c. Support farm businesses through technical and financial resources such as the Ag-Business Development Office of the Illinois Department of Agriculture

<http://www.nipc.org/2040/>

The Chicago Metropolitan Agency for Planning (CMAP) was created as the comprehensive regional planning organization for the seven counties of northeastern Illinois. By state and federal law, CMAP is responsible for producing the region's official, integrated plan for land use and transportation. The GO TO 2040 planning campaign will develop and implement strategies, such as agricultural preservation, to address projected population and employment growth and its serious implications for transportation, housing, economic development, open space, the environment, and natural resources. See www.cmap.illinois.gov and www.goto2040.org for more information.

Agricultural preservation is a strategy within CMAP's 2040 Regional Comprehensive Plan because it is an integral part of the economy and the local ecosystem that supports the region. It is also an important way of life for some residents and provides the opportunity for rural living. This strategy paper will present agricultural preservation as it pertains to the decisions and policies of the region to develop and preserve land for economic and environmental purposes. Also, a main goal of this paper is to stimulate further discussion among experts, local governments and advocacy groups that could highlight best practices, common challenges, opportunities, and successes. All of these outputs will help shape the [GO TO 2040 plan](#).

Overview of Existing Conditions

What is the agricultural landscape in the Northeastern Region of Illinois?

The map of Agricultural Lands in northeastern Illinois shows where agricultural land is located within the region. Will, McHenry, Kane, and Kendall counties all have significant and valuable amounts of agricultural land. Future land use and development decisions will affect the regional landscape, which may lead to further decline of agricultural land.

The Agricultural Economy in Illinois

Commodities

Illinois is clearly a leader in agricultural production, not only in the nation, but also globally. Illinois ranked seventh in the nation (2002) on value of all agricultural products sold, which totaled approximately \$7.5 billion (2002) and ranked 1st in the production of soybean, 2nd in the production of feed grain and products, and 3rd in the country for total value of crop sales (USDA, 2002). For the fiscal year of 2006, Illinois still remained highly ranked in commodity production—2nd in both feed grains and soybeans. Also in 2006, Illinois exported 5.5% of the nation’s agricultural products abroad (USDA Economic Research Services). Illinois is also a large provider of hogs and other livestock. **Table 1** summarizes farm income for the State of Illinois in 2006.

Illinois farm income gross cash receipts, 2006, in thousands of dollars

Crop	Income
Corn	\$3,594,141
Soybean	\$2,509,651
Wheat	\$190,079
Greenhouse and nursery	\$304,986
Vegetable Crops	\$70,185
Hay	\$55,991
Other crops	\$61,222
Sorghum	\$15,439
Fruits and nuts	\$34,872
Oats	\$4,273
Total Crops	\$6,840,839
Hogs	\$803,417
Cattle and Calves	\$595,751
Dairy Products	\$277,347
Poultry and Eggs	\$89,394
Other livestock products	\$25,321
Sheep and lamb	\$3,630
Total Livestock & Products	\$1,794,860
Total Income	\$8,635,699

Source: Illinois Agricultural Statistics Service, Farm Food & Facts 2007

Table 1. Illinois Commodities

The trends within the northeastern region of Illinois are consistent with the rest of the state. The region contains over 700,000 acres used for producing corn and soybean—the two primary crops (USDA NASS). Livestock is also an abundant commodity in the region; hogs and pigs, and cattle and calves are two major groups that were valued at over \$42 million in 2004 (USDA NASS). Solely within the triangle of Illinois-Indiana-Wisconsin, agricultural goods valued at \$29 billion have traveled 14 billion ton-miles (Federal Highway Administration, 2002). These agricultural goods are often transported nationally or internationally, contributing to the region’s status as a major freight hub.

Farm Characteristics

A majority of Illinois farms are operated by individuals or families, and the average age of operators is 55 (Census 2002). During the last few decades, there has been a significant decline in the number of farms. In conjunction with this decline, there has been a trend in farm consolidation which has increased the average size of farms. During the period of 1970-2000, 51,000 farms disappeared across the state (Census 2002). **Figure 1** shows the declining trend for the northeastern Illinois region. In 1978, there were 5,492 farms. By 2002, the total number of farms had decreased by 38% to 3,358 (Census 2002). In 2002, the average size of a farm in Illinois grew to 374 acres, from an average of 262 acres in 1974 (**Figure 2**).

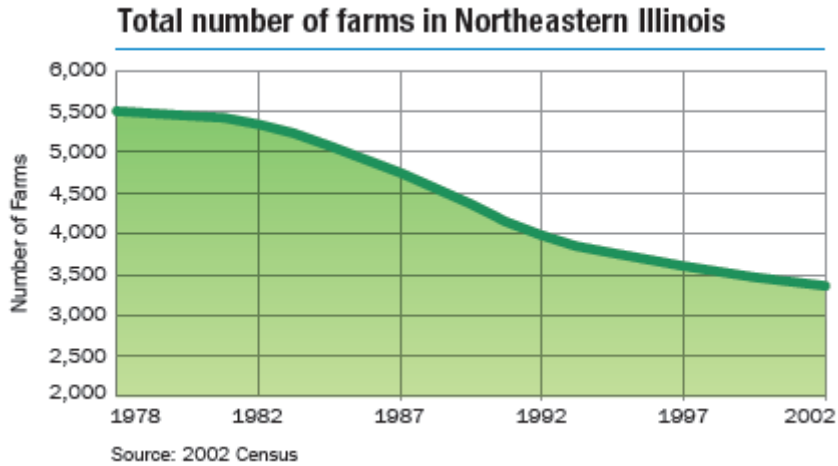


Figure 1. Number of farms in northeastern Illinois

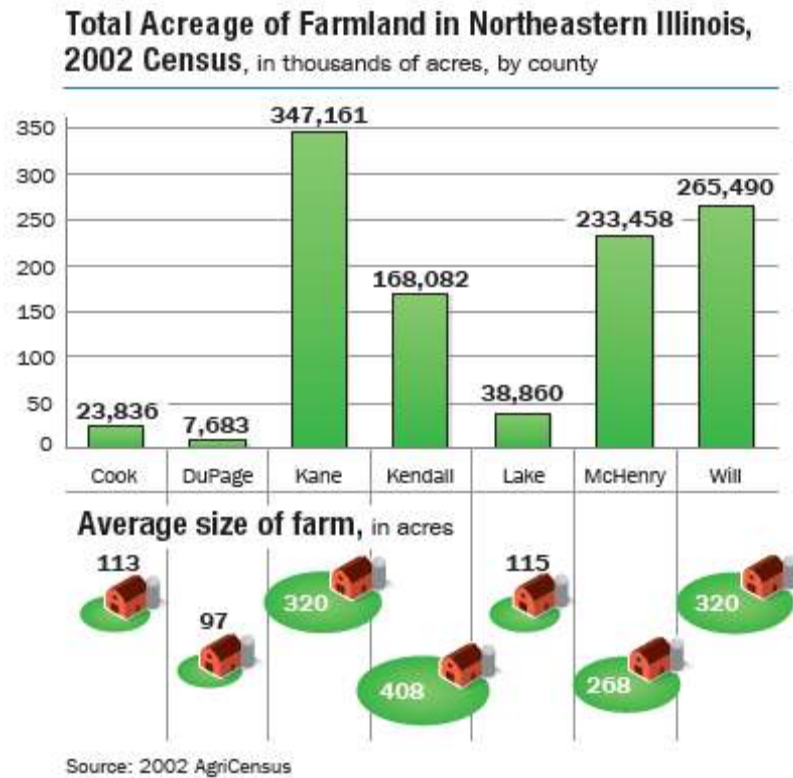


Figure 2. Total Acreage of Farmland in northeastern Illinois

Farming Operations

Improvements in technology have decreased the necessity for manual labor in farming. Many farmers have sold their land, and there has been an increase in processed food production and consumption. The total number of jobs connected to agriculture (including wholesale and retail trade) for Illinois was approximately 951,000 in 2002 (Economic Research Service, USDA), having declined over the past few decades due to these trends. Additionally, international trade agreements have also decreased demand for domestic food production during the last several decades.

While farming profit margins have been declining, operational expenses have been rising. Prices for equipment and gasoline, cost of land, and feed for cattle and hog, have increased. Due to more expenses and shifts in demands, farming income fluctuated greatly between 2000 and 2006. In northeastern Illinois, the average production cost per farm was \$111,000 (USDA 2002) and the average net cash income of operation for farmers in the region was \$19,325 per year (USDA 2002).

The Role of Policy for Agricultural Preservation

The role of policies for farmland protection is critical. Statutes that regulate the conversion of agricultural land to non-agricultural land exist on the federal, state, and local levels; they all use a variety of methods to reach the same goal of preserving prime farmland. It is important that there is secured funding and a sound framework that allows all levels of governments to pursue agricultural preservation programming.

Federal Policies

The Farm Security and Rural Investment Act of 2002, commonly known as the Farm Bill of 2002, has been the primary source of agricultural preservation developed by the federal government. This act created a specific Farmland Protection Program which focused on providing “funds to State, tribal, or local governments and to nonprofit organizations to help purchase easements against development of productive farmland” (USDA Economic Research Services). Over six years, the program allocated \$597 million to be used for purchasing development rights from lands that had prime, unique, or productive soils, and/or historical or archaeological resources (USDA Economic Research Services). As of March 2008, a new Farm Bill was passed by the Senate, but negotiations are still taking place. This proposed Farm Bill recommends a consolidation of certain programs in order to create more efficiency in the conservation process. The proposed Environmental Quality Incentives Program (EQIP) would embrace a broader range of agricultural lands including cropland, grazing land, feeding operations, and agricultural production lands (US Department of Agriculture). The new Private Lands Protection Program would encompass all of the past easement programs and almost double funding. This new program would also seek to provide instruments to better monitor the purchased easements, award extra points to those applicants that provide public open space, and add time to the process of choosing candidates due to the reduced standards and regulations (US Department of Agriculture).

State Policies

Illinois has a number of state policies in place to support agricultural preservation. The state has adopted or enabled local governments to adopt policies such as agricultural district areas, conservation easements, right-to-farm laws, and purchase of development rights. A major break for farmers is the land use assessment procedure that values the land based on its soil productivity index, rather than land market value (ILGA, Property Tax Code). Other legislation requires the state to minimize its own conversion of prime farmland (both directly and indirectly), secure funding for agricultural research, and mandate notification to local Soil and Water Conservation Districts if any municipality is planning to rezone or subdivide agricultural land.

Important State Legislative Policies

Among all of Illinois' initiatives to preserve agricultural land, there are three key policies that have been exceptional in their effort to assist preservation.

1. ***State Farmland Assessment***- provides farmland to be assessed based on its soil quality which is gauged by a complicated process conducted by the University of Illinois, the Illinois Department of Agriculture, and the Illinois Department of Revenue. This allows farmland to be assessed by its agricultural value as opposed to market value and causes taxes to be less cumbersome for struggling farmers.
2. ***Protection of Farming Operations***-when nonfarm uses encroach upon agricultural areas, there is a threat of nuisance suits against farmers. This policy protects farmers from suits like these.
3. ***Illinois Soil and Water Conservation District Act*** requires that anyone seeking to rezone or subdivide agricultural land to notify the county's Soil and Water Conservation District. This provides for a stronger awareness on the county and state level as to the rate of agricultural land being converted to other uses.

State Legislation "In the Making"

As of mid-2008, there were three pending bills in the Illinois legislature regarding agricultural preservation in either the House or Senate. At the time of the posting of this report, all of these bills have been referred to the Rules Committee.

Illinois Senate Bill 1992 (2008)

An amendment to county code passed allows a county with over 1,000,000 residents to levy an annual tax no greater than .05% of the equalized assessed value of taxable property in the county for farmland preservation purchase of easement purposes if approved by referendum

Illinois House Bill 4774 (2008)

An amendment to the county and Illinois municipal codes which allows county boards and corporate authorities of municipalities, for the purpose of preserving agricultural land, to purchase or accept donations of development rights

Illinois House Bill 4462 (2008)

Provides that Kane County specifically may levy an annual tax of no greater than .05% of the equalized assessed value of taxable property in the county for farmland preservation purchase of easement purposes if approved by referendum

Local Efforts

Individual counties within Illinois have additional techniques to preserve agricultural land, including purchase of development rights, agricultural zoning, land use restrictions, farmland protection programs, conservation easements, and agricultural security areas. Agricultural zoning usually consists of a maximum ratio of developed acres to agricultural acres. Farmland protection programs can consist of their own easement purchase programs, but these easements are usually funded by the Farm and Ranch Land Protection Program (FRPP) or a state government program. Other restrictions are agricultural security areas, and growth area boundaries. One of the most useful and valuable tools used by local governments is the Land Resource Management Plan, which outlines land use goals and objectives for a municipality and sets standards.

Several case studies of local efforts are available in an appendix to this report. Kane County is often identified as the region's leader in agricultural preservation, as it has preserved over 4,000 acres of

farmland using a purchase of development rights program. More information on Kane County’s work is available here.

Trends in the Region

What is threatening farmland?

The most serious threat to the viability of farmland in the region is rapid suburban development. Much of the region’s growth in the past several decades has occurred on formerly agricultural land. Often, residential development occurs first, and then creates demand for more roads, schools, and other services.

Farmland is desirable to residential and commercial developers because it is inexpensive to acquire and develop. In a survey completed in 2007 by the Illinois Society for Professional Farm Managers and Rural Appraisers (ISPFMRA), farmland per acre sold in 2006 between \$3,600 to \$10,625 for prime land, \$3,400 to \$5,600 for good quality land, and \$1,800 to \$3,500 for recreational tracts of land for activities such as agri-tourism. The highest prices paid per acre were concentrated in Southern Illinois; within Northeast Illinois land values were also high and values were between 7% and 12% higher than the prior year (Aupperle, Schnitkey, ISPFMRA).

The Housing Boom’s Impact on Farmland

The 2006 estimated population of northeastern Illinois was 8,496,884 (CMAP). **Table 2** gives a population breakdown per county, and the number of new building permits that were approved by each county.

Northeastern Illinois county data		
County	Total population	Building Permits
Cook	5,288,655	19,886
DuPage	932,670	3,178
Kane	493,735	4,523
Kendall	88,158	2,258
Lake	713,076	2,505
McHenry	312,373	2,634
Will	668,217	5,882
Total	8,496,884	40,866

Building permits, 2006 actuals, total population, 2006 estimates
Source: <http://quickfacts.census.gov/qfd/states/17/17197.html> (Census data)

Table 2. Population and Building Permits by County

Approximately 41,000 new building permits were issued within the region for development during 2006. Most of this development can be classified as residential. Not only have building permits been on demand, housing sizes have also increased, making the footprint of new development even more significant. In 1970, the average home was 1,500 sq feet. By 2002, it was up to 2,230 sq feet (National Association of Home Builders, 2004). Also, as reported in the 2005 “Homes for a Changing Region” report, sponsored by the Chicago Metropolis 2020 and Metropolitan Mayors Caucus, many suburban jurisdictions require densities or no more than 3 or 4 homes per acre (Chicago Metropolis 2020).

The Lake County Experience

Lake County was selected as a regional example because they have tracked land use changes very closely. As the third most populous county in the region, Lake County has seen significant changes over the last 5 years that have contributed to a decline in agricultural land use. Lake County experienced a 9% population growth between 2000 and 2005. Simultaneously, between 2000 and 2005, 8,500 acres of agricultural land were converted to other uses. Agricultural land still accounts for 35,021 acres (2005), but the county continues to develop, meaning that conversion of much of this land to other uses is likely.

Additionally, Agriculture, Forestry, Fishing and Hunting saw the biggest percentage loss of jobs, (7.1%) within the employment sector of Lake County, after manufacturing jobs. Zoning changes included a net increase of residential land use, with a net decrease of acres in agricultural land use.

As of 2005, the two largest land use areas in Lake County are public and private open space and single family residential. **Figure 3** shows the percent increase of the two largest land use areas, compared with the decrease in agricultural land during the same timeframe.

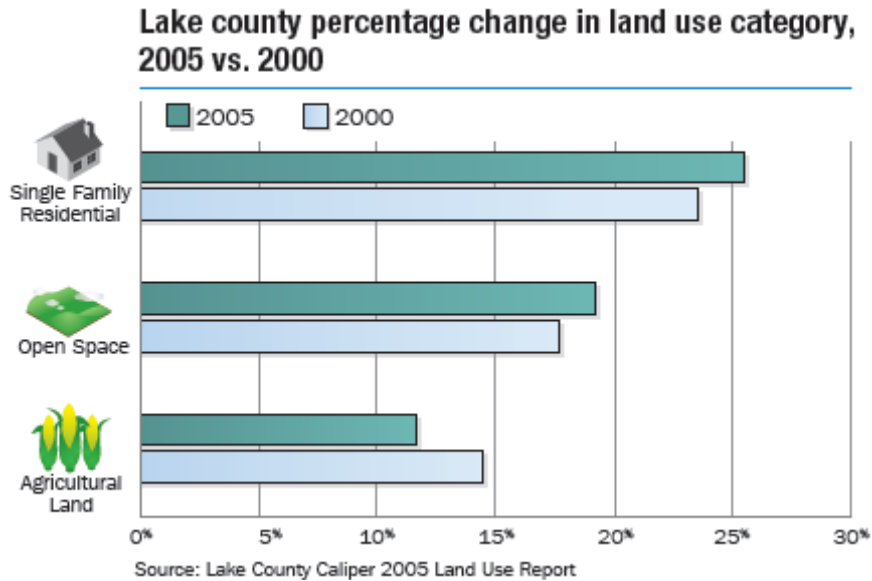


Figure 3. Lake County Change in Land Use (2000-2005)

Regional Trends

The rapidly changing prices and demand for farmland requires that we view farmland in perspective of regional gain or loss. **Table 3** gives a regional view of farmland acres comparing 1997 and 2002 agricultural census data statistics. If the trend remains the same, farmland will continue to erode at the same pace or perhaps faster.

Illinois and regional total land and farmland acreage loss, 2002 vs. 1997

Location	*2000 Total Land Area		**Total Farmland			
	Sq. Miles	Acres	1997 Acres	2002 Acres	Difference	Rate of Change
Illinois	55,584	35,573,491	27,673,285	27,310,833	362,452	-1%
Cook	946	605,235	42,174	23,836	18,338	-43%
DuPage	334	213,510	17,654	7,683	9,971	-56%
Kane	520	333,082	215,146	198,227	16,919	-8%
Kendall	321	205,171	169,909	168,082	1,827	-1%
Lake	448	286,438	52,528	38,860	13,668	-26%
McHenry	604	386,246	251,041	233,458	17,583	-7%
Will	837	535,642	300,090	265,490	34,600	-12%
Region Total	4,008	2,565,325	1,048,542	935,636	112,906	-12%

Sources: *2000 U.S. Census, **2002 Census of Agriculture, USDA

Table 3. Farmland Acreage Loss (1997 – 2002)

Between 1997 and 2002, DuPage County lost 56% of its agricultural land, Cook lost 43%, equivalent to 9,971 and 18,338 acres, respectively, while Will County lost nearly 35,000 acres of farmland.

Regional Projections

Kendall, Will and Kane Counties are among the Top 100 Fastest Growing Counties (CNN Money, 2005) in the country and ranked 7th, 32nd, and 84th respectively in the 2004 US Census for fastest growing counties, and continue growing. **Table 4** shows 2030 population estimates (NIPC). With rapid increases in population, but with limited resources, there is an urgent need for housing, and support services, which some counties simply cannot keep up with, considering their limited taxing capabilities and funding streams.

Northeastern Illinois county estimates

County	2005 Estimates	Population Estimate 2030	Employment Estimate 2030
Cook	5,303,683	5,952,794	3,305,002
DuPage	929,113	1,003,702	830,394
Kane	482,113	718,465	352,208
Lake	702,682	841,860	463,509
McHenry	303,990	457,642	168,629
Will	642,813	1,076,469	415,704
Kendall	n/a	190,149	85,774
TOTAL	8,364,394	10,241,082	5,621,220

Source: 2030 Population and Employment Estimates from NIPC 2030 Regional Framework Plan 2005, excluding Kendall County. Kendall County data is from the State of Illinois 2005, 2005 Estimates U.S. Census 2005 Estimates.

Table 4. 2030 Population and Employment Forecasts

Factors affecting Agricultural Preservation

Environment

Farmland is essential to the vitality of the region and agricultural preservation will be an important element in creating regional sustainability. Increasing conversion of agricultural land for non-agricultural uses not only threatens farmland, but quality of air, water, and soil for the region.

Lower density in suburban and rural communities reduces viability of public transportation and residents rely predominantly on single-occupancy vehicles for transportation. Increased vehicle use reduces air quality because emissions from vehicles contribute carbon monoxide, ground-level ozone, particulate matter, and greenhouse gases. In addition to finding ways to increase density and decrease distance of communities from existing infrastructure and urban centers, farmland can also play a role in improving the environment.

Techniques aimed at promoting efficient soil absorption, such as carbon sequestration and no-till farming, are known as conservation management practices. These practices can dramatically reduce atmospheric greenhouse gases and improve air quality (Cook). Vegetation removes carbon dioxide from the region’s atmosphere and deposits it into the soil, allowing carbon accumulation in the ground to be dramatically increased. Other conservation practices include “planting cover crops and replanting degraded lands with perennial grasses” (Dr. CW Rice). Additional benefits of conservation practices and carbon sequestration are “increased soil fertility, reduced erosion, improved wildlife habitat and better soil and water quality” (CASMGs). As a result of good farming practices, greenhouse gas emissions can be reduced, improving air quality.

Two other key environmental benefits of farmland preservation are improved soil and water quality. Both soil and groundwater are negatively affected by loss of agricultural land and increased impervious surfaces. Increased impervious surfaces lead to increased storm-water runoff (Stormwater Authority) and removal of valuable soil layers. Lower soil quality is less efficient in the removal of pollutants which can cause contamination of groundwater sources, leaking into “springs, wells, streams, wetlands and surface water” (Cook). Farmland preservation can play an important role in protecting our natural resources, improving environment and health.

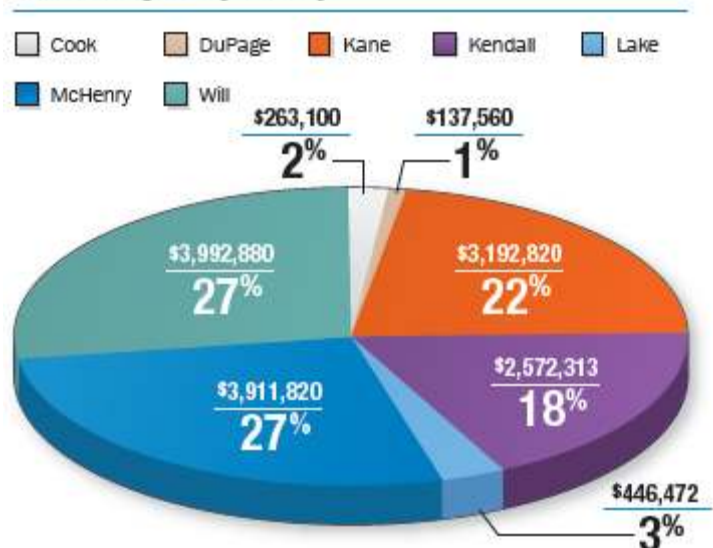
Economy

Illinois’ agricultural industry has generated jobs, affected land values, and contributed to the Gross Regional Product, amounting to billions of dollars each year. Three factors strengthening the agricultural industry today are: 1) federal government funding, 2) changing attitudes toward local food production, and 3) the ethanol boom. These factors represent a changing tide in the agricultural economy which will undoubtedly impact preservation.

Federal Funding

The main source of conservation payments and commodity subsidies come from the federal government, which allocated a total

Federal government payments* to Northeastern Illinois region by county



*Conservation reserve and wetlands reserve programs and other federal farm programs
Source: 2002 AgriCensus

of \$237.5 million directly to recipients in Illinois for conservation programs between 2005 and 2006 (Environmental Working Group, 2005-2006). For commodity subsidies, this funding allocation was \$2.49 billion during the same timeframe (Environmental Working Group, 2005-06). Illinois was ranked in the top 5 states for federal funding receipts both years.

Funding receipts are likely to change with the new Farm Bill 2007 which aims to alter program funding allocations, possibly increasing opportunities to save thousands of acres of farmland per year. The bill proposes to shift more funding toward a new system of conservation payments and less toward the traditional direct funding to farmers for commodities (Environmental Defense). Under the new Farm Bill legislation, 37 states containing over 550,000 farms should receive increased funding (Environmental Defense).

Additionally, the Farm and Ranch Land Protection Program (FRPP) operated under the Natural Resources Conservation Service (NRCS) matches 50% of conservation easement payments from a state, local government, private or not-for-profit organization. Illinois has taken advantage of federal funding, but the FRPP program has not been fully utilized. NRCS funded 978 Environmental Quality Incentives Program (EQIP) contracts on 199,621 acres, and provided more than \$11.4 million to landowners to implement conservation plans; Illinois NRCS received more than \$1.8 million in FRPP funds and obligated some funds to Kane County to protect 558 acres of farmland (2005 Illinois NCRS Report).

Organic Farming

Increasing popularity of organic farming has allowed both producers and consumers to make sustainable contributions to their local economy and the environment. The market has grown considerably in the last decade increasing roughly 20% each year from 1998 to 2004 (Laux, 2006). Sales are projected to continue increasing anywhere from 9% to 16% until 2010 (Laux, 2006). The benefits of organic farming include: availability of fresh food for consumers, stabilization of soil qualities, increased job opportunities, and increased profits for farmers, all of which directly stimulate the local and state economy. Also, local farmland has the potential to play a key role in reducing greenhouse gas emissions through conservation farming practices.

According to local experts, organic farmers are only meeting less than 2% of the existing market for organic food in Illinois, met with product from Wisconsin, Illinois, and Indiana. Moreover, analysis indicates that “more than 95% of the organic produce sold in Chicago area comes from out of the region” (The Prairie Partners Group).

It is estimated that retail sales of organic food ranges from \$502 to \$628 million in Illinois (Sustain, Family FarmEd). The organic market within Illinois is brimming with opportunity, especially employment opportunities. On average, organic farming requires 11% more work per unit of production than ordinary farming practices (Kuepper & Gegner, 2004). This drives up the demand for labor thereby increasing the number of jobs. Studies have shown that the organic food products that have the highest premiums are fruits, vegetables, grains, and milk. In 2005, the amount of Organic foods grew 16.2% and brought in \$13.8 billion in sales nationwide (Organic Trade Association, 2006). The potential for the organic market is significant.

Ethanol Production

One of the most anticipated economic drivers for agriculture in Illinois and the other parts of the Midwest is ethanol production. Much of the demand for ethanol over the past few years and current future projections came after the passage of the Clean Air Act Amendments and the National Energy Security Act by Congress. The Energy Security Act is focused on improving energy efficiency through reduced consumption and improved products. The Clean Air Act was created with the objective to reduce acid rain, urban air pollution, and toxic air emissions. Both Acts paved the way for increased use of ethanol--a form of renewable energy. The foreseeable use for ethanol is for a renewable bio-fuel, termed E85, 85% ethanol

and 15% gasoline, which would be used to fuel a certain fleet of vehicles. Most automobile fuel in Illinois is composed of 90% gasoline and 10% ethanol (Illinois Corn Association). Due to its high corn crop production, Illinois has invested \$1 billion in the ethanol industry, creating 800 jobs in plant operations and 4,000 jobs in industry-related services (Illinois Corn Growers Association). The expectation is that the U.S. will become less dependent on fossil fuels for gasoline in the future.

Although the spike in demand for ethanol has provided a new opportunity for the agricultural economy in the Midwest, there are also potential negative repercussions that are being considered (Wescott, 2000). The high demand for corn, the main ingredient of ethanol, would alter the current corn market and the overall commodities market. This could lead to higher corn prices and drive the need to substitute corn for animal feed. Also, the market for corn would influence farmers' decisions on how they rotate crops, causing less diversity in the farm fields. Lastly, it is likely that government outlays for farm programs would be reduced due to higher farm incomes. All of these changes would eventually mean higher food prices for consumers (Wescott, 2000). In fact, many reports indicate that food prices are already rising, though it is difficult to disentangle this change from other factors such as fuel prices.

According to a study done by the Nebraska Public Power District, ethanol plants can provide economic benefits for the local economy. NPPD reports that a typical 40 million gallon ethanol plant will provide a one-time boost of \$71 million to the local economy during construction, generate over \$70 million for the local economic base of the community, create at least 33 full time jobs, and increase household income for the community by \$6.7 million annually (Ethanol across America).

Presently, 40% of the ethanol consumed in the country is produced from corn grown in Illinois (Illinois Corn Growers Association). There are 62 permits issued or under review for ethanol plants in towns and cities all over the state of Illinois (Illinois EPA). Ethanol also has high potential for tax income generation at the state level. The ethanol and gas mixture sold within Illinois is named gasohol and the state applies tax to 80 percent of the proceeds from sales of gasohol (IL Department of Revenue, 2004). Although there is high anticipation for ethanol in the region and nationwide, the actual results remain to be seen, but if ethanol does meet the expectations set, the agricultural economy, market, and policies will be led in a new direction. However, there is considerable concern about the actual environmental benefits of ethanol. CMAP will be examining this in greater detail in a separate report on energy.

Land Use

Agricultural Landscape

Community character is a key factor residents use to select their neighborhoods; character creates a community identity and is differentiated by landscapes, streets, and people. Agricultural preservation contributes to a rural community character. One definition of rural character is: "a landscape where the predominant feature is the natural environment, such as open space, farmland, woodlands and water bodies, and the intrusion of development is minimal" (Hunterdon County, NJ). As farmland is replaced by development, rural character is disappearing across the region.

Development can affect the viability of nearby farms. The following factors were identified as some of the ways in which this happens:

- Farmers must compete with residents for road space when transporting their equipment or goods.
- There is crop vandalism and complaints about farming operations when residents relocate to rural areas.
- Infrastructure for farming business has disappeared from the local areas, leaving farmers to travel further to meet their business needs.
- There is no funding to incent farmers to keep their land and continue farming when competing with development and developer's large cash offers for land.
- Demand for open space has increased with residential developments, in many cases open space that is preserved is replacing land that was once used for agricultural purposes.

Costs and Benefits of Agricultural Land Preservation

Suburban and rural development often leads to new infrastructure and public facilities, such as roadways and schools, which can be costly for many communities according to cost of community service studies (COCS). These studies were designed by the American Farmland Trust and have become a standard way of examining the costs and benefits of different land uses for planning purposes. The key cost categories of a community service study usually include: 1) public safety, 2) public works (utility), 3) transportation, and 4) education. Other important categories include culture and recreation, health and human services, and local government services.

COCS Study Results from Wisconsin

In a Cost of Community Services (COCS) study about Dane County, Wisconsin three towns were selected to represent different but common types of communities. The purpose of the study was to evaluate the fiscal impact of the town’s land use decisions. The Town of Dunn had a history of strong agricultural preservation but was close to an urban fringe of Madison, the capitol city of Wisconsin. The Town of Perry was least developed and in a rural township and faced some scattered development. The Town of Westport, close to the City of Madison, continually dealt with rapid development and population growth. The study concluded that in all three towns of Dane County, “Although residential development may expand the tax base, according to the results, the tax revenue associated with the developments were offset by even larger increases in public services provided to the development” (University of Wisconsin-Madison, Aug 1999). The revenue/expenditure ratios were as follows for the three towns:

The cost of community services for three Dane county townships

Town	Residential Only	Ag- Residential	Commercial/Industrial	Ag-Land Only	Swamp/Forest
Dunn	\$1:1.02	\$1:1.09	\$1:0.55	\$1:0.16	\$1:0.10
Perry	\$1:1.20	\$1:1.21	\$1:1.04	\$1:0.09	\$1:0.04
Westport	\$1:1.11	\$1:1.23	\$1:0.27	\$1:0.13	\$1:0.08

Source: *The Cost of Community Services for Three Dane County Townships*, pg. 18, Table 17, Summary of Results

Table 5. The Cost of Community Services for 3 Dane County Townships

As the table shows, the agricultural-residential land has a slightly higher ratio than residential-only because agricultural land is assessed at a lower value resulting in lower tax revenue. Agricultural land-only has a much lower ratio than both residential-only and agriculture-residential because the cost of service is much less than the revenue derived from the land.

COCS Study Results from Illinois

In a research study focused on the Chicago Metropolitan Area, fiscal costs and public safety risks of low-density residential development in rural areas were evaluated. The study examined the provision of public services, including emergency and education with the goal of determining if new residential development further from mature suburban developments and urban centers was a major contributing factor to higher fiscal costs. Also, response time for emergency services was measured to assess the level of risk presented.

The study results concluded that for schools, at selected homes in “early scatter sites” (new development), “two-thirds of new homes were at least three miles or more and 25% of new homes were five miles or more”; “High-school bus routes averaged 51.5 minutes round trip and 44.5 minutes for elementary routes” (Esseks, Schmidt, Sullivan, 1999). Finally, the average response to emergency medical calls was just less than 10 minutes, for fire calls it was 15 minutes, and police it was 25.3 minutes (Esseks, Schmidt, Sullivan, 1999). In comparison to selected new homes in matured scattered sites some commute and response times were similar, but “higher densities of development and tax base permitted the building of school campuses and fire/emergency medical service station at the edge of the nearby city,” which was a benefit for those residents and less burdensome on surrounding communities (Esseks, Schmidt, Sullivan, 1999).

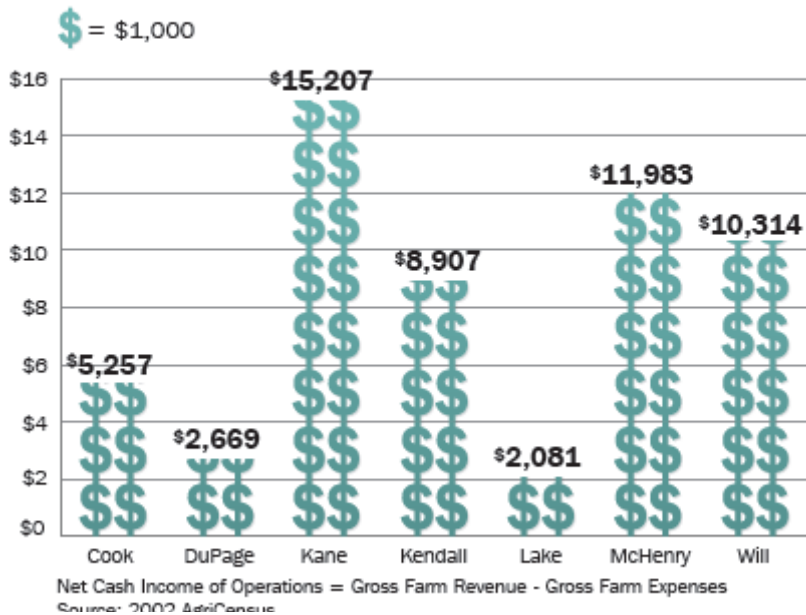
Overall, the topic of this research study coincides with the challenges that many townships and counties face when the population increases faster than resources permit to expand public services. Newer development in rural areas poses additional costs and resource constraints on the local municipalities and tax-paying residents.

Conclusion

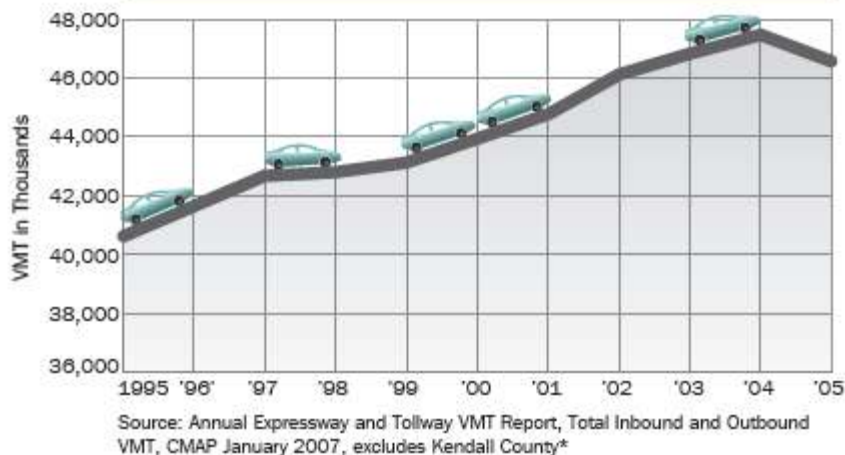
Agricultural preservation is an essential topic in the discussion of creating a sustainable and healthy region. This report has sought to examine the current issues facing agricultural preservation efforts in the region to inform the treatment of this topic in the *GO TO 2040* plan.

Additional Agriculture Related Graphs in Northeastern Illinois

Total net cash income of operation for the Northeast region, in thousands of dollars, by county



Annual expressway & tollway vehicles miles traveled in Northeastern Illinois, 1995-2005



Bibliography

- American Planning Association Research Staff :Shannon Armstrong, Michael Davidson, Stuart Meck, "A Smart Growth Agenda in Illinois", January 1999
- Chicago Metropolis 2020, "Homes for a Changing Region", www.chicagometropolis2020.org
- CNNMoney.com, "100 fastest growing counties," http://money.cnn.com/2006/03/15/real_estate/fastest_growing_US_counites/index.htm
- Connecticut Department of Agriculture, <http://www.ct.gov/doag/cwp/view.asp?a=1366&q=258978>
- Cook, Maurice G., Extension Soil Science Specialist, The North Carolina Extension Service, "Soil Facts, Good Soil Management Helps Protect Groundwater"
- Dale E. Aupperle, AFM, ARA, Gary Schnitkey, Ph.D, "What's Driving Farmland Values?", Illinois Society for Professional Farm Managers and Rural Appraisers (ISPFMRA), www.ispfmra.org
- Daniels, Tom, "The Purchase of Development Rights, Agricultural Preservation and Other Land Use Policy Tools-The Pennsylvania Experience, State University of New York at Albany, <http://ageconsearch.umn.edu/>
- Dr. C.W. Rice, Consortium for Agricultural Soils Mitigation of Greenhouse Gases (CASMGs), Kansas State University, Department of Agronomy, www.casmgs.colostate.edu
- Economic Research Services, USDA, Illinois farm and farm-related employment, 2002 <http://www.ers.usda.gov/Data/FarmlandRelatedEmployment>
- Edwards, Jackson-Smith, Ventura, Bukovac, WLURP (Wisconsin Land Use Research Program) COCS Dane County, Wisconsin, Research Report No.1, "The Cost of Community Services for Three Dane County Townships: Dunn, Perry, and Westport", August, 1999
- Edwards, Jackson-Smith, Ventura, Bukovac, WLURP (Wisconsin Land Use Research Program) Research Report No.1, August, 1999, "The Cost of Community Services for Three Dane County Townships: Dunn, Perry, and Westport", *quote found on pg. 18*
- Environmental Defense, "Fairness on the Farm: Subsidy Reform Would Help More Farmers in More States", http://www.edf.org/documents/7068_Fairness%20on%20the%20Farm_web.pdf
- Environmental Working Group, U.S. Farm Subsidies, Commodities, <http://farm.ewg.org/farm/progdetail.php?fips=00000&progcode=totalfarm>
- Environmental Working Group, U.S. Farm Subsidies, Preservation Programs, <http://farm.ewg.org/farm/progdetail.php?fips=00000&progcode=totalcons>
<http://www.census.gov/popest/counties/CO-EST2004-09.html>
- Ethanol Across America, http://www.ethanolacrossamerica.net/CFDC_EconImpact.pdf
- Hunterdon County Planning Board, Preserving Community Character in Hunterdon County, A Community Design Handbook, December 1999

- Illinois Corn Growers Association, Ethanol Fact Sheet,
<http://www.ilcorn.org/Ethanol/EthanolFact/ethanolfact.html>
- Illinois Corn Growers Association, <http://www.ilcorn.org/Ethanol/EthanolFact/ethanolfact.html>
- Illinois Department of Agriculture, “Facts about Illinois Agriculture.” Illinois Department of Agriculture, August 2004, <http://www.agr.state.il.us/about/agfacts.html>
- Illinois Department of Revenue, Gasohol,
<http://www.revenue.state.il.us/publications/bulletins/2004/Fy200404.pdf>
- Illinois General Assembly, Property Tax Code, Article 10 Division 6, (35 ILCS 200/10-115, 15-173 new) <http://www.ilga.gov/legislation/ilcs>
- Illinois EPA website, <http://www.epa.state.il.us/air/permits/ethanol-plants.html>
- Illinois NCRS Report, 2005, (http://www.il.ncrs.usda.gov/news/reports/ilstrpt_2005.html)
- Infrastructure Planning, Stormwater Authority,
www.stormwaterauthority.org/assets/Infrastructure_planning.pdf
- Kuepper, George and Gegner, Lance, ATTRA National Sustainable Agriculture Information Service, 2004, <http://attra.ncat.org/attra-pub/organiccrop.html>
- Lake County Caliper, “Measuring Lake County’s Growth & Development”, 2005 Land Use Inventory and Regional Framework Plan Implementation Report, November 2007
- Lancaster County Growth Tracking Report, 1993-2003, “A Decade of Smart Growth Management”, http://www.co.lancaster.pa.us/planning/lib/planning/pdfs/1993_2003gtr.pdf
- Laux, Marsha, “Organic Food Trends Profile”, June 2006, Agricultural Marketing Research Center, <http://www.agmrc.org/agmrc/markets/Food/organicfoodtrendsprofile.htm>
- NIPC 2005, 2040 Regional Framework Plan, www.nipc.org/
- NIPC Population Estimates, Northeast Region, <http://www.nipc.org/forecasting/cnty2005.html>
- Ohio State Case Study: *All data received directly from the Ohio Department of Agriculture & Office of Farmland Preservation*
- Organic Trade Association, 2006 Manufacturer Survey,
www.ota.com/pics/documents/short%20overview%20MMS.pdf
- PA Dept. of Agriculture, Data and Statistics,
<http://www.agriculture.state.pa.us/agriculture/cwp/view.asp?a=3&q=128824>
- Reference: National Association of Home Builders, 2004 Housing, Facts, Figures & Trends*
- Steve Winkelman, Greg Dierkers, Erin Silsbe, MacWubben, Shayna Scott, “Air Quality and Smart Growth: Planning for Cleaner Air”, Translation Paper, No. 16, Funder’s Network, 2005
- The Consortium for Agricultural Soil Mitigation of Greenhouse Gases, www.casmgs.colostate.edu

The National Academies, “Water Implications of Biofuels Production in the United States,” October 2007

U.S. Census Bureau, “100 fastest growing counties,”

U.S. Census Bureau, Census of Agriculture, Northern Illinois Data Set,
<http://www.illinoisdata.com/dbs/agricultural/farm/illinois.htm>

U.S. Department of Agriculture, 2002 Census of Agriculture, State Profile for Illinois, National Agriculture Statistic Services Fact Finders for Agriculture, <http://www.nass.usda.gov/>

USDA National Agricultural Statistics Service, 2004 Illinois County Statistics,
<http://www.agstats.state.il.us/ctyest/2004Main.htm>

USDA 2007 Farm Bill Proposals, <http://www.usda.gov/documents/07finalfbp.pdf> , pg. 49

USDA 2007 Farm Bill Proposals, <http://www.usda.gov/documents/07finalfbp.pdf> , pg. 43

USDA Economic Research Services, State Export Data, www.ers.usda.gov/data/stateexports/

USDA Economic Research Services, USDA 2002 Farm Bill, Title 2: Conservation, Farmland Protection Program (FPP), <http://www.ers.usda.gov/Features/Farmbill/titles/titleiiconservation.htm>

USDA National Agricultural Statistics Service, Hogs, Pigs & Cattle
<http://www.agstats.state.il.us/ctyest/04hogs%20&%20pigs.pdf>