



Kane County - Aug. 1, 2013



GROWING FOR KANE

HEALTH - ECONOMY - FRESH FOOD

HEALTH IMPACT ASSESSMENT

EXECUTIVE SUMMARY

Kane County Health Department
Kane County Development + Community Services Department



The Health Impact Assessment (HIA) report demonstrates there is considerable support in the research, literature, and business and resident surveys for creation of a new policy and program that will have positive economic and health impacts for residents and will stimulate local food production. As a result, a new Food and Farm Ordinance entitled, "Growing for Kane" is recommended to the Kane County Board for adoption. The new policy and program will help to address the county's growing obesity issues and low rates of fruit and vegetable consumption that affect health. This is in line with goals from the Kane County 2040 Plan, Community Health Improvement Plan, and Fit Kids 2020 Plan. It will also help retain and attract new producers of fruits, vegetables, meats and dairy.

Evidence shows that increasing local production of fruits, vegetables, meats, and dairy in the county will have a positive impact on health.

-  Residents who have access to fresh produce will purchase and consume it.
-  There is a demand for fresh produce, based on results from Link usage at farmers markets located in areas with vulnerable populations.
-  There will be an increase in jobs and a boost to the local economy if more fruits and vegetables for human consumption are grown in Kane County.
-  There is a strong positive relationship between income and better health outcomes.
-  Local stakeholders support the plan based on responses from several surveys.

Table 1 HIA REPORT RECOMMENDATIONS

Recommendation	Result
Kane County should create and pass a separate, sister ordinance instead of amending the current ordinance 01-67 by Fall, 2013.	Keeps current program and its history intact, demonstrates the past success and desire to continue it. Sister ordinance will allow for more flexibility in funding.
Under the new ordinance, Kane County will offer as appropriate perpetual and term easements; leases of public land, along with funding and incentives, to support retention of existing producers; create more scattered-site and smaller farms transitioning to producing fruits and vegetables.	Secures long term use of the land for food production giving the farmer and the community commitment to local food.
Kane County should work with Northern Illinois Food Bank (NIFB) and Kane County Farm Bureau to study the feasibility of locating a food hub by June, 2014.	Farmers have motivation to grow more produce with centralized cleaning, packaging and distribution available off farm.
The Farm Bureau should assist those farmers who apply to sell produce, meats and dairy for local consumption with resources and partnership such as Meet the Buyer events and other linkage programs.	More healthy produce and protein is available for Kane County residents, and increases Kane County farmers' earnings potential when paired with food hub.
The Farm Bureau and Kane County should participate in linking procuring institutions such as NIFB and schools with local growers for pre-season contracts.	Ensures vulnerable population has access to fresh produce purchased on their behalf through the food bank or local schools.
The ordinance should allow participating farms to be located in all areas of Kane County and be of any size.	Brings the products to the areas that most need them and spur economic activity countywide.
The Farm Bureau should lead the discussion of creating a branding campaign "Grown in Kane" by June, 2014.	Helps farmers market their goods and encourages local businesses to purchase their products.
The Kane County Health Department should lead a multi-department review of current policies and regulations relating to local food production by June, 2014.	Determines if any can be changed, updated, or removed to better support local food production.

➤ Through the use of HIA, Kane County examined what the health impacts would be if an amendment to the current ordinance was approved, increasing the number of farms who produce fruits, vegetables, meats, and dairy for human consumption. HIA looks at current health indicators and makes predictions on the potential impacts of the pending decision. In this report, the HIA was used to help create a new ordinance. In the process, the HIA project team examined data collected through surveys, literature review of published reports and research analyses, and expert local stakeholder input to guide the creation of a new ordinance, based on the findings of the data assessment.



➤ The economic portion of this report shows that by adding approximately 1,000 acres of fruit and vegetable production to the already existing base of specialty crops grown in Kane County, more than \$7 million dollars and 103 jobs will be added each year to the county's overall economy and will support the regional market. The retail and institutional markets for locally grown food include farmers' markets; local schools; corner stores; restaurants; grocers; Northern Illinois Food Bank and the pantries it serves.

Kane County Farm Bureau leadership and local producers support a change in policy that allows farming on all size parcels in all parts of the county.

Encouraging urban agriculture is indicated among a list of possible changes to government programs and policies that would make local food production more feasible according to farm bureau members and current food producers. Use of term agreements, tax credits, leases, and other incentives will help attract new people to farming while retaining existing vegetable and food producers through supporting the scaling up of their operations. Furthermore, the evidence demonstrates links between

contact with nature (including gardens), urban green infrastructure, and improvement in overall health and mental well-being.

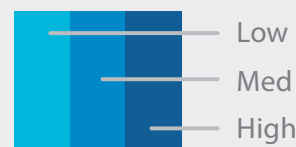
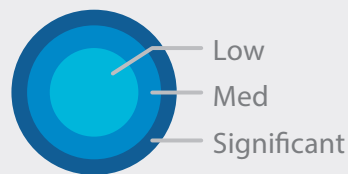
To promote these opportunities, Kane County should create the Growing for Kane Program which may fund temporary or permanent easements or restrictions for a term of years. Leasing opportunities or cooperative contractual arrangements by governmental entities or private landowners may also be offered to persons seeking to utilize local production and marketing of locally grown food products, including use of greenhouses or similar facilities, regardless of location within Kane County. See Table 2 for the proposed policies for the program.

Table 2 PROPOSED GROWING FOR KANE POLICIES

- Use of term easements and possible financial assistance to the current use of perpetual agreements (i.e. agreements with property owners) to grow fresh produce, meats, and dairy for local consumption
- Prioritize farms that grow fresh produce, meats, and dairy for local consumption including but not limited to farmers markets, hospitals, schools and other institutions, restaurants, food suppliers and home consumption
- Include farms of varying sizes and in rural and urban areas throughout the county
- Coordinate pre-season contracts or other agreements to grow for Northern Illinois Food Bank for percentage of product grown and distributed to county's vulnerable population

Table 3 SUMMARY IMPACTS TABLE

Health Outcome	Impact	Quality of Evidence
Social + Emotional Wellness		
Life Expectancy		
Increase Attention In School/Child Care		
Obesity Rate		
Chronic Disease Rate		
Disparities w/ Vulnerable Population		



Significant means it affects a large number of people in the county and reaches vulnerable populations which have health disparities. Quality of evidence refers to how much data was found to support the research on the health outcome. High means there is substantial evidence located to support the finding.

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Partners + Funding

This HIA was supported by the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts. The opinions expressed are those of the author(s) and do not necessarily reflect the views of the Health Impact Project, Robert Wood Johnson Foundation or The Pew Charitable Trusts.

Partners in this HIA include Kane County Agriculture Committee (T.R. Smith, Chairman), the Kane County Farmland Protection Commission, the American Farmland Trust, Kane County Farm Bureau, Northern Illinois Food Bank and an interdisciplinary group of staff from the county departments of Development & Community Services and Health.

The authors appreciate the technical assistance received from Bethany Rogerson, MS, Health Impact Project, Kim Gillhuly, MPH, Human Impact Partners, and Julia Freedgood, MA, American Farmland Trust.

To learn more about Health Impact Assessment and to view the complete report visit:

www.kanehealth.com/hia.htm





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HEALTH IMPACT ASSESSMENT

REPORT

Proposed Food + Farm Ordinance
to Support Locally Grown Food in Kane County





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+ EXECUTIVE SUMMARY

The Health Impact Assessment (HIA) report demonstrates that there is considerable support in the research, literature, and business and resident surveys for creation of new policy and program that will have positive economic and health impacts for residents and will stimulate local food production. As a result, a new Food and Farm Ordinance entitled, “Growing for Kane” is recommended to the Kane County Board for adoption. The new policy and program will help to address the county’s growing obesity issues and low rates of fruit and vegetable consumption that affect health. This is in line with goals from the Kane County 2040 Plan, Community Health Improvement Plan, and Fit Kids 2020 Plan. It will also help retain and attract new producers of fruit, vegetables, meats and dairy.

This report examines the potential health impacts of supporting more fresh food grown in Kane County. Evidence shows that increasing local production of fruits, vegetables, meats, and dairy in the county will have a positive impact on health.

-  Residents who have access to fresh produce will purchase and consume it.
-  There is a demand for fresh produce, based on results from Link usage at farmers markets located in areas with vulnerable populations.
-  There will be an increase in jobs and a boost to the local economy if more fruits and vegetables for human consumption are grown in Kane County.
-  There is a strong positive relationship between income and better health outcomes.
-  Local stakeholders support the plan, based on responses from several surveys.

Through the use of HIA, Kane County examined what the health impacts would be if an amendment to the current ordinance was approved, increasing the number of farms who produce fruits, vegetables, meats, and dairy for human consumption. HIA looks at current health indicators and makes predictions on the potential impacts of the pending decision. In this report, the HIA was used to help create a new ordinance. In the process, the HIA project team examined data collected through surveys, literature review of published reports and research analyses, and expert local stakeholder input to guide the recommendations for a new ordinance, based on the findings of the data assessment. Table 1 lists the recommendations of the HIA report.

The economic portion of this report shows that by adding approximately 1,000 acres of fruit and vegetable production

to the already existing base of specialty crops grown in Kane County, more than \$7 million dollars and 103 jobs will be added each year to the county’s overall economy and will support the regional market. The retail and institutional markets for locally grown food include: farmers’ markets, local schools, corner stores, restaurants, grocers, Northern Illinois Food Bank and the pantries it serves.

Kane County Farm Bureau leadership and local producers support a change in policy that allows farming on all size parcels in all parts of the county. Encouraging urban agriculture is indicated among a list of possible changes to government programs and policies that would make local food production more feasible according to farm bureau members and current food producers. Use of term agreements, tax credits, leases, and other incentives will help attract new people to farming while retaining existing vegetable and food producers through supporting the scaling up of their operations. Furthermore, the evidence demonstrates links between contact with nature (including gardens), urban green infrastructure, and improvement in overall health and mental well-being.



To promote these opportunities, Kane County should create the Growing for Kane Program which may fund temporary or permanent easements or restrictions for a term of years. Leasing opportunities or cooperative contractual arrangements by governmental entities or private landowners may also be offered

to persons seeking to utilize local production and marketing of locally grown food products, including use of greenhouses or similar facilities, regardless of location within Kane County. See Table 2 for the proposed policies for the program.

Table 1: HIA Report Recommendations

Recommendation	Result
Kane County should create and pass a separate, sister ordinance instead of amending the current ordinance 01-67 by Fall, 2013.	Keeps current program and its history intact, demonstrates the past success and desire to continue it. Sister ordinance will allow for more flexibility in funding.
Under the new ordinance, Kane County will offer as appropriate perpetual and term easements; leases of public land, along with funding and incentives, to support retention of existing producers; create more scattered-site and smaller farms transitioning to producing fruits and vegetables.	Secures long term use of the land for food production giving the farmer and the community commitment to local food.
Kane County should work with Northern Illinois Food Bank (NIFB) and Kane County Farm Bureau to study the feasibility of locating a local food hub by June, 2014.	Farmers have motivation to grow more vegetables with centralized cleaning, packaging and distribution available off farm.
The Farm Bureau should assist those farmers who apply to sell produce, meats and dairy for local consumption with resources and partnership such as Meet the Buyer events and other linkage programs.	More healthy produce and protein is available for Kane County residents, and increases Kane County farmers' earnings potential when paired with food hub.
The Farm Bureau and Kane County should participate in linking procuring institutions such as NIFB and schools with local growers for pre-season contracts.	Ensures vulnerable population has access to fresh produce purchased on their behalf through the food bank or local schools.
The ordinance should allow participating farms to be located in all areas of Kane County and be of any size.	Brings the products to the areas that most need them and spur economic activity county-wide.
The Farm Bureau should lead the discussion of creating a branding campaign "Grown in Kane" by June, 2014.	Helps farmers market their goods and encourages local businesses to purchase their products.
The Kane County Health Department should lead a multi-department review of current policies and regulations relating to local food production by June, 2014.	Determines if any can be changed, updated, or removed to better support local food production.

Table 2: Proposed *Growing for Kane* Policies

Use of term easements and possible financial assistance to the current use of perpetual agreements (i.e. agreements with property owners) to grow fresh produce, meats, and dairy for local consumption.
Prioritize farms that grow fresh produce, meats, and dairy for local consumption including but not limited to farmers markets, hospitals, schools and other institutions, restaurants, food suppliers and home consumption.
Include farms of varying sizes and in rural and urban areas throughout the county.
Coordinate pre-season contracts or other agreements to grow for Northern Illinois Food Bank for percentage of product grown and distributed to county's vulnerable population .



The following table summarizes the predicted magnitude of impact, should the proposed ordinance be implemented.

Table 3. Summary Impacts Table

Health Outcome	Magnitude of Impact	Quality of Evidence
Social and emotional wellness	• •	Low
Life expectancy	• • •	Low
Increase attention in school/child care	•	Low
Obesity rate	• • •	Medium
Chronic disease rate	• • •	High
Disparities with vulnerable population	• • •	High

• = Low •• = Medium ••• = Significant.
Significant would mean it affects a large number of people in the county and reaches vulnerable populations which have health disparities. Quality of evidence refers to how much data was found to support the research on the health outcome. High would mean there is substantial evidence located to support the finding.

+ INTRODUCTION

Kane County, Illinois has gained a reputation for its award-winning efforts in land use and economic planning for agriculture at the edge of Chicago's metropolitan region. No other collar county in Chicago has created the leadership and partnerships around protection of the water and soil base of some of the country's best farmland that is under extreme development pressure. Now the county leadership in food and farming are examining the health and economic potential of increasing locally grown food for all of its citizens, and especially the low-income population, who often have limited access to enough fresh produce to lead a healthy, active life. Data from the Kane County Community Health Assessment¹ show that residents at or below the poverty level have higher rates of diabetes hospitalizations than residents overall. Minority residents also have higher rates of diabetes hospitalizations and infant mortality than the rest of the county.



Only 14% of adults and 25% of children consume at least five servings of fruits and vegetables per day, below the state and national averages. Almost two-thirds of all adults in the county are considered overweight and/or obese. Economic factors like unemployment and Link* card usage are also higher for certain residents and are tied to poor health outcomes. These figures show there are serious health problems facing the county and how vulnerable populations are disproportionately affected by certain health issues. Although there are plans in place which are

addressing these health issues, this report will examine how the health of residents is impacted by a specific change in policy regarding the production of fruits and vegetables in the county.

Like much of Illinois, Kane County has some of the most productive farmland in the world and agriculture has been the dominant land use in the county for 150 years. Also like much of Illinois and the nation, Kane County has critical challenges to the health of its citizens, specifically in the areas of obesity and diabetes. Agriculture in Kane County plays a key role in the county's 2040 land use strategy and the goals for a future that includes healthy people, healthy living and healthy communities. Kane County, challenged by economic and population shifts that undermine health, is categorized by the United States Department of Agriculture (USDA) as prime farmland under high pressure for development, as Illinois is ranked #5 in the nation for conversion of prime farmland to non-agricultural uses.²

Kane County has a 50-year history of strongly supporting land use strategies that discourage premature conversion of its 175,000 acres of farmland and guides new development toward planned growth areas. In 2011, the County launched the "Quality of Kane" initiative, which recognized the importance of integrating health, land use, and transportation planning to better serve its residents. Planners from the three disciplines are working together to ensure that the county reaches its vision of having the "healthiest residents in Illinois by 2030." Building on the Fit Kids 2020 Plan and with extensive community input, a new suite of long-range plans were adopted by the Kane County Board in 2012: the 2012-2016 Community Health Improvement Plan, the 2040 Plan, and the 2040 Transportation Plan, all focused on creating Healthy People, Healthy Living and Healthy Communities. The 2040 Plan continues the endorsement of agriculture and states *"an overriding policy of Kane County is to support agriculturalists, on the land they operate, thereby enhancing the prosperity, efficiency and continued long-term health of agricultural activities in Kane County."*³

As one of its implementation strategies of its 2020 Land Resource Management Plan, the County introduced its now nationally recognized and award winning farmland protection program in 2001 to preserve land use for agriculture and to sustain the agricultural production base. To date, local and federal USDA Farmland Protection dollars invested in the program total over \$32.6 million and approximately 5,000 acres of the finest soils and farmland are now permanently protected.

*Link is the Supplemental Nutrition Assistance Program (SNAP) for Illinois residents (formerly called food stamps).
Recipients are given a debit card which is used to purchase food

The program, which has 30 family farms, currently favors large acreage parcels producing conventional row crops such as corn and soybeans.

With the knowledge that Kane County residents are not consuming enough fruits and vegetables and nearly two-thirds of adults are considered overweight and/or obese, implementation of the goals in the Fit Kids 2020 Plan, 2012-2016 Community Health Improvement Plan, and the 2040 Plan has become a priority. As staff examined the County's Farmland Protection ordinance, it became clear that the program could serve as a vehicle to bring healthier food options to residents of the county and provide an economic boost to the local agricultural industry. However, an amendment to the Farmland Protection ordinance or a new sister ordinance would be needed to specifically address the County's negative health trends and to serve as the needed mechanism to capture federal, or other, dollars. The support of the County's existing suite of plans would help the County implement new policy, systems, and environmental changes to promote high quality of life and would play a major part in encouraging the County Board to incorporate health in policies and plans. The Health Impact Assessment would provide an opportunity to support more integrated decision making on the farmland protection program and broaden consideration beyond economic impacts and stakeholder interest.

By amending Kane County Ordinance No 01-67, *Adopting and Implementing the Kane County Agricultural Conservation and Easement and Farmland Protection Program*[†], the county is now considering broadening annual local and federal program investments to include small farms (producing fruits, vegetables and meats) to increase access to fresh produce for schools, for the Northern Illinois Food Bank's network of food pantries, farmers markets, food assistance sites in the community, as well as the open market. In early 2013, an amendment to the ordinance has been introduced that offers incentives through the farmland protection program to diversify food crop acres and increase acres dedicated to food production.

About Health Impact Assessment

Health Impact Assessment (HIA) is defined by the World Health Organization as follows: "A combination of procedures, methods and tools by which a policy, programme or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population."⁴ HIA helps policy makers analyze potential health impacts by bringing together scientific data, health expertise and public input to identify the potential health effects of proposed new laws, regulations, projects and programs. There are six steps in the process, listed on the right.



- 1 SCREENING**
Helps determine if conducting an HIA would be feasible or helpful in making a decision about a plan, program, or policy.
- 2 SCOPING**
Objectives are created and the process is outlined.
- 3 ASSESSMENT**
Involves determining baseline data, predicting an outcome, and conducting literature reviews, qualitative analysis and/or quantitative modeling to gather information relating to the decision. The analysis may identify specific vulnerable populations that are affected by the decision and may be considered when weighing pros and cons of a decision.
- 4 RECOMMENDATION**
Based on the analysis completed in the assessment stage.
- 5 REPORTING**
Disseminates the findings of the HIA to key decision makers and stakeholders. It includes the recommendations from the previous step.
- 6 MONITORING + EVALUATION**
Overall quality of the HIA is addressed, along with determining the impact the HIA had on the decision-making process and monitoring the health effects of the final decision for the plan, program, or policy.

The HIA hypothesized that if Ordinance 01-67 were amended to include small farms in all areas of the county, and if incentives to using land for farms of this sort were incorporated, there would be a corresponding increase in access to and consumption of locally grown foods and thereby an improvement in health status. The HIA also hypothesized an increase in jobs and revenue from more products produced locally, and subsequent impacts to health from having a more fully employed populace in Kane County. This furthers the county's number one goal of Economic Prosperity as stated in the 2040 Plan, *"Encourage and promote farming, sustainable agriculture and local food production and their related businesses in Kane County including the production, sale and research of agriculturally related goods and services."*⁵

As detailed in the following Health Impact Assessment report, the hypotheses were supported by the literature, resident and farmer surveys, and predictions based on the existing conditions in Kane County.

The proposed amendment also furthers three of the Public Health goals stated in the 2040 Plan and Community Health Improvement Plan, and food policy goals in the Fit Kids 2020 Plan:

- Assures access to safe food and clean and safe water and air.
- Increases access to and consumption of fresh fruits and vegetables.
- Promotes the use of Health Impact Assessments with new or updated land use, transportation, and health policies, programs and plans.

Table 4: Proposed Amendment to Kane County Farmland Protection Ordinance 01-67

Current Ordinance + Policies	Possible Revisions to Ordinance and Policies
Uses Perpetual Easements to Protect Farmland in Perpetuity	Add the use of term easements and other financial incentives to the current use of perpetual agreements (i.e. agreements with property owners to grow fresh produce, meats, and dairy for local consumption).
Prioritizes Farms in the Western Agricultural Area	Also prioritizes farms that grow fresh produce, meats, and dairy for local consumption including but not limited to farmers markets, hospitals, schools and other institutions, restaurants, food suppliers and home consumption.
Prioritizes Large Farms in Proximity to Each Other	Expands the ordinance policies and selection practice to include farms of varying sizes and in rural and urban areas throughout the county.
Not Addressed in Ordinance	Offers participants pre-season contracts or other incentives to grow for Northern Illinois Food Bank for percentage of product grown and distributed to county's vulnerable population.

The intent of the amendment is to strengthen Kane County's agricultural base, while not diminishing its strong commodity crop presence. With the trend of development moving closer into downtown areas and concentrating around transit and major transportation investments, there is sufficient land base, previously identified for development, that is now best suited for smaller sized agriculture parcels. In Kane County those parcels are found in not only its Agricultural Food and Farms area, but also its Critical Growth and Sustainable Urban Areas.

In the pages that follow, this report describes how the Kane County project team applied the steps of HIA to assess how an amendment to the Farmland Protection Ordinance 01-67 would impact nutrition, social and emotional wellness, obesity, and other health indicators as well as the economic impacts on the county.

+ BACKGROUND AND SCREENING

Recognizing the important role the environment plays in health and building on a strong planning tradition, Kane County agencies looked to improve health through increasing the number of small farmers producing and selling fruits and vegetables locally, decreasing the expansion of urban development, and continuing to improve economic prospects for county residents and organizations. With these ideas, the county decided

to develop an amendment to the Farmland Protection Ordinance, intended to expand the use of the Farmland Protection Program to include and incentivize small farmers that sell locally. Based on Kane County's commitment to considering health in all policies and more fully integrating health and land use, the Kane County Health Department and Development and Community Services Department pursued funding through the Health Impact Project, a collaboration of the Robert Wood Johnson Foundation and The Pew Charitable Trusts, to conduct an HIA. The HIA helped the County to better understand how a change to the program would impact health indicators like obesity and fruit and vegetable consumption, and to how it could maximize the potential health benefits. With funding, the project team concurrently conducted a health impact assessment.

During the first step of HIA, Screening, the project team sought to determine if conducting an HIA would add value to the process of amending the current farmland protection ordinance to include smaller farms in all areas of the county that produce goods for human consumption (fruits, vegetables, meats, eggs, dairy, grains). The initial proposals for the amendment were shared with various experts in the field to gather their impressions on the changes and feedback. As part of the screening process, the policies were reviewed and revised based on in-depth interviews with Kane County Farm Bureau Manager; Northern Illinois Food Bank Director; Kane County Fit for Kids Coordinator and Registered Dietician; Cadence Health staff; and local grower and farm owner of Heritage Prairie Market.

With the positive feedback from the initial interviews, the project team looked more closely at the current state of farming and health in Kane County. In 2012, the Kane County Board passed a suite of plans and resolutions showing their support for a full range of health-promoting programs and activities in Kane County that build upon the Quality of Kane initiative. This includes the Fit Kids 2020 Plan, the 2012-2016 Community Health Improvement Plan, the 2040 Transit Plan, the 2040 Pedestrian and Bicycle Plan, and the 2040 Transportation Plan. The comprehensive Kane County 2040 Plan includes a chapter devoted to community health and goals for encouraging preservation of farmland, increasing local food production, and improving food access for all residents. From a long-term planning perspective, there was support for the proposed amendment to the ordinance. In addition, Illinois is ranked #5 for conversion of prime farmland to development, and Kane County is under high pressure for development. The 2040 Plan has specific goals



Strengths of Kane County Agriculture

- Large acreage devoted to agriculture.
- History of diversified agriculture.
- Institutional support for agriculture including Kane County Farm Bureau, University of Illinois Extension Research facility.
- History of Kane County's support of agriculture public policy.
- Right to Farm legislation.
- 12 year history of Kane County Farmland Protection Program.
- \$32 million investment of local and federal funds in farmland protection.
- Growing number of farmers markets.
- Increased use of Link, credit and debit cards at farmers market.

related to keeping 50% of Kane County land in agricultural uses and the amendment would support those goals.

The local food movement has grown in Kane County with more people wanting to understand where their food comes from and having a relationship with the farmer who raised or grew what they are eating. There are new food co-ops starting in several towns, some farmers markets have pledged to be local-only and others ask that a certain percentage of items sold be from the farm itself. Building upon the local food movement, interest in community gardens is increasing in Kane County, as evidenced by the number of community garden plots and garden networks. Through a series of awards designed to increase access to fruits and vegetables, the Fit for Kids Funders' Consortium set in motion a dramatic increase in the number of garden plots available to residents. This Consortium is a local, multi-sector, public-private partnership that raises and disperses funds to support comprehensive, coordinated, community-based initiatives to reverse the childhood obesity epidemic in Kane County. In 2009, about 800 garden plots were available for lease, primarily through park districts. Today there are over 1,300 plots available, through new partnerships with churches and employers. The Kane County Forest Preserve has 384 plots located in two communities, one of which serves a vulnerable population that previously did not have a place to garden. More than 100 additional plots are available through public/private local business partnerships and 12 plots which are accessible by individuals with disabilities. Two hospitals and one business provide plots specifically for employees. Several gardening networks exist, including the Elgin Community Garden Network which has 29 sites throughout the city and is growing annually. The Fit for Kids Funders Consortium awarded funding to eight garden projects in the county including apartment complexes, schools, and churches.

The number of farmers markets in the county has also increased, with 13 markets open in 2013 and an additional three winter markets. Several markets now accept Link cards, which is the Supplemental Nutrition Assistance Program card for Illinois, with funding assistance provided by the Fit for Kids Funders Consortium. There are many small farms in the county that sell at farmers markets in the area and there is interest from several potential farmers about purchasing land for growing produce and/or raising meats. There is a new housing development that broke ground in 2012 which will provide residents an opportunity to live in a sustainable community centered around a working farm.

Finally, from a health perspective, Kane County has the second highest percentage (64%) of adults who are overweight or obese in the metropolitan Chicago area, and death and disability from nutrition-related diseases like

diabetes, nephritis, and cardiovascular disease are higher than or rival state and federal rates. 45% of children enrolled in Kane County school districts are eligible for free and reduced price lunch, and the poverty rate in the county is 11%, up 18% from a year prior. The cities of Aurora and Elgin have poverty rates of 14% and 16% respectively, showing a greater need for assistance in these large urban areas.⁶ Access to healthy food is challenging when income levels are low and healthy food generally costs more than less healthy, fast food meals available throughout urban areas in Kane County.



With the feedback from local stakeholders, formal planning initiatives supporting local food production, and the increase of community gardens, farmers markets, and local growers, the project team determined there would be support for an increase in local food production through an amendment to the ordinance. However, the specifics of the amendment were unclear and part of the screening process was to decide on specific ideas for the amendment and then conduct the HIA on the proposed ideas. This would allow stakeholders to refine the amendment based on results of the HIA before it was presented for approval by the Kane County Board. The project team members worked closely with the farm and health community and strove to remain as objective as possible while completing the screening step and throughout the HIA process.

+ RESEARCH SCOPE

With input from stakeholders and technical assistance providers, the project team determined the potential impacts of the amendment and defined which impacts to consider in the assessment.

The project team received initial ideas on the project scope from stakeholders at an HIA training session in April 2012. The stakeholders who contributed to the draft scope came from the following sectors:

- **Municipal planning:** City of Elgin.
- **Regional planning:** Chicago Metropolitan Agency for Planning.
- **Local farms** (both commodity and small specialty growers).
- **Transportation:** Kane County Division of Transportation
- **Land use:** Kane County Development and Community Services Department.
- **Higher education:** Northern Illinois University Nutrition professor.
- **Agriculture:** Kane County Farm Bureau.
- **Housing:** Kane County Office of Community Reinvestment.
- **Public Health:** Kane County Health Department.

Training participants were particularly interested in understanding the amendment's potential impact on farmers markets, volume of locally grown foods, number of jobs, the economy, and term easements. As a result, the project team expanded upon these themes by adding research questions to the assessment's scope. For a complete list of research questions, see Appendix B.

The scope of the assessment was further refined with input from crop growers, members of the health community, and other farm-related stakeholders. Through several outreach channels outlined below, stakeholders provided information about crops grown, participation in farmers markets, distance from the markets, and CSA offerings. These questions are included in the scoping spreadsheet found in Appendix B.

To collect feedback on the scope from the identified stakeholders, the project team used a variety of methods:

Phone calls: One-on-one calls to those who are not located close to the Kane County government center.

In-person meetings: For those who are close to the government center and have the time to meet face-to-face.

Existing meetings: For groups that meet on a regular schedule, HIA project team staff attended their meetings.

Survey: Outreach to selected farmers in the Kane County area and other stakeholders.



Shift,⁷ a 2010 report that studied local food production in Northeast Ohio, which allowed people to answer simple questions that were aligned with specific research questions in the scope. The questions and responses can be found in Appendix C.

Based on the responses from the survey and above methods, the project team chose research questions that focused on four aspects of the proposed amendment and the impacts on health:

- Economic impacts of the amendment;
- Production of local foods for human consumption;
- Use of term agreements; and
- Inclusion of farms of all sizes in all areas of the county.

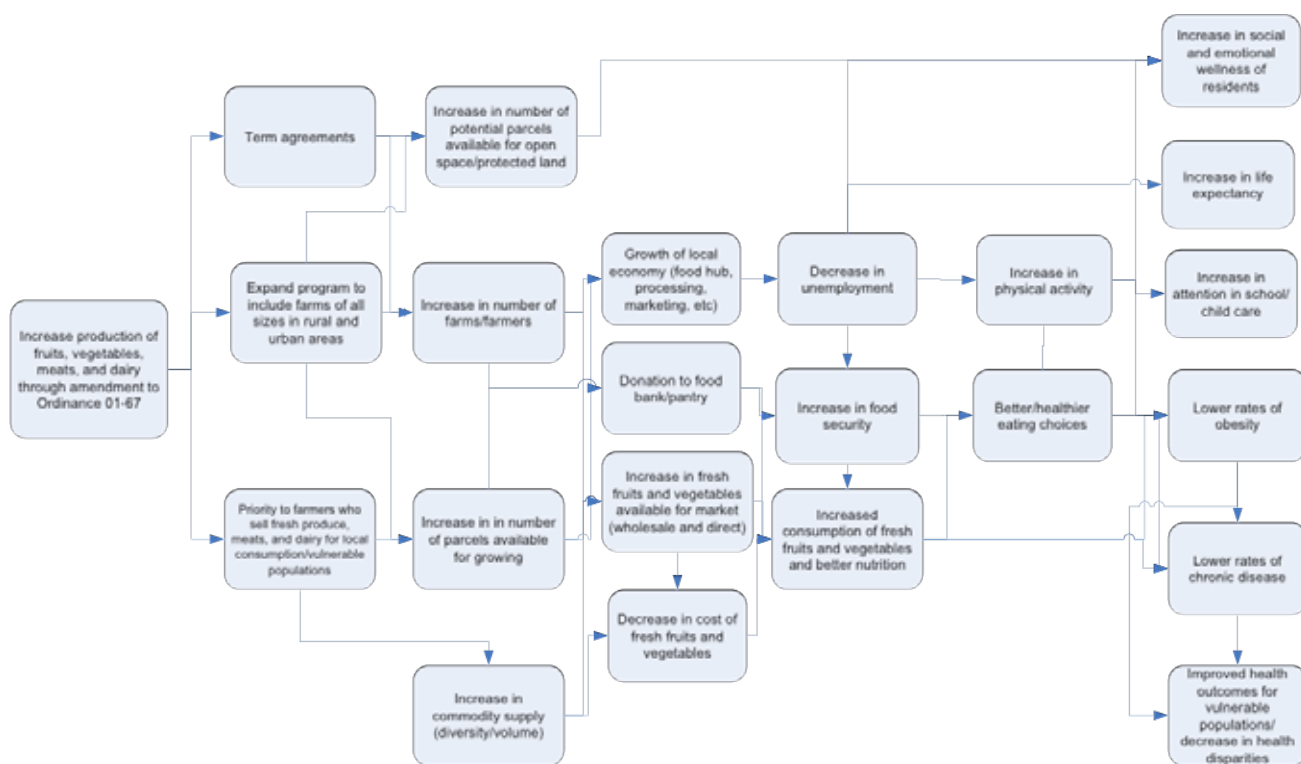
Although the environmental impacts of local farming on health are an important aspect of farming, the HIA project team did not include that impact as part of the HIA as it was not a priority based on feedback from stakeholders. Water

quality and greenhouse gas emissions from transporting food are examples of environmental impacts on health which are not explored further in this report.

Figure 1 below is a pathway diagram, a graphical representation of the predicted ways the proposed changes to the amendment would impact health.

Figure 1: Pathway Diagram

Kane County Farmland Protection Ordinance Amendment Pathway Diagram



+ ASSESSMENT METHODS

The HIA project team utilized several methods to collect data that would answer the research questions identified in the Scope. In 2011, the Kane County Health Department led a comprehensive community health assessment, in partnership with all five hospitals serving the county, two large United Ways, and a mental health board.

This assessment identified the top health issues in the county and was used to update the Community Health Improvement Plan and the 2040 Plan. This data also supported a robust baseline health assessment for the HIA. Data included demographic information and was broken down by county planning areas, helping to identify where the most vulnerable populations are located. A summary of the relevant findings from the assessment are included in the next section, Assessment Analysis and Recommendations and in Appendix H.

The project team collected new data through four additional surveys and questions based on the Scope. Kane County Farm Bureau members, local farmers, municipal and regional

planners, and other stakeholders in the local food system provided responses for the surveys. See Appendix D for a summary of the survey methodology and stakeholder input.

Other evidence was gathered through a literature review of reports, journal articles, newspaper articles, and other published works which focused on consumption of fresh produce, economic effects on health, and local food production. Searches were conducted using Google Scholar and by searching reference pages from relevant journal articles and other published HIA reports. Grey literature was collected and reviewed using links from website organizations and documents shared during webinars and workshops attended by project team members.



+ ASSESSMENT ANALYSIS AND RECOMMENDATIONS

The Assessment portion of this HIA begins with some general information about Kane County that provides context and background for the rest of the HIA. It also addresses how disparities in health outcomes impact Kane County's vulnerable populations and residents overall.



Also detailed is the connection between food, diet, and health, including some of the existing conditions in Kane County on this topic.

Findings are grouped by the specific policies to be included in the amendment:

- 1 Production of local foods for human consumption.
- 2 Inclusion of farms of all sizes in all areas of the county.
- 3 Use of term agreements.
- 4 Analysis of economic impacts of the amendment.

General

According to the 2007 United States Census of Agriculture, Kane County has 192,372 acres of farmland, mostly in production for commodity crops for the global market and only 1,180 acres of land was in production for vegetables.⁸

The Connection between Food, Diet, Income + Health

Research shows how a poor diet affects health. Cook and Frank⁹ found that food insecurity and poor nutrition correlates with developmental and behavioral problems for children. The National Prevention Strategy¹⁰ focuses on how healthy eating reduces rates of heart disease, high blood pressure, diabetes, osteoporosis, and several types of cancer, as well as helps people maintain a healthy body weight. Reviews by Maller et al¹¹ and Tzoulas et al¹² show evidence of links between contact with nature (including gardens), urban green infrastructure, and improvement in overall health and mental well-being.

The direct impact of local food production on community health is not conclusive; however, fresh local foods provide higher nutrient value; and increased availability of locally grown, fresh product may encourage healthier choices than if the local option was not offered. Research by the Feeding America, "Map the Meal Gap" study estimates 11.2% of the Kane County population or 56,050 people are defined as food insecure individuals.¹³ While they may or may not qualify for federal assistance; many rely on charitable food assistance. To address this gap and need, a direct goal of Feeding America is to obtain one billion pounds of fresh produce by 2015.

A study of a change in nutritional standards at the San Francisco Unified School District showed that student participation in the federally subsidized school lunch program increased when the change was made. Students also indicated through a survey that they noticed there were more fruits and vegetables offered in the cafeterias (50%), thought the food tasted better than in the past (46%), they participated in eating the new, healthier offerings because they were free or inexpensive (70%).¹⁴ Although many food service providers are reluctant to offer more nutritional options because of a perceived increase in cost and decrease in revenue, this study showed school cafeteria revenue stayed the same or increased for the schools participating.

Demand for fruits and vegetables are likely to increase. To

** The U.S. Department of Agriculture defines food security as "access by all people at all times to enough food for an active, healthy life." <http://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-us.aspx#.UfLmEI21GCI>

meet current dietary guidelines, intake would need to increase by 50 percent. In terms of variety, Americans would need to substantially increase their consumption of red and orange vegetables by 166 percent, legumes by 76 percent, and starchy vegetables by 29 percent, and other vegetables by 20 percent.¹⁵

Braveman and Egerter present powerful evidence of the link between income and health.¹⁶ See Figures 2 and 3 for a detailed

chart of their findings, which includes a breakdown by race/ethnicity. African Americans and Hispanics report fair or poor health more often than Whites and those who fall into the low income categories have higher percentages of fair or poor health, regardless of race. Both income and racial/ethnic groups matter when it comes to health status.

Figure 2: Relationship Between Poor Health Status, Income and Race/Ethnicity

Health Varies by Income + Across Racial or Ethnic Groups

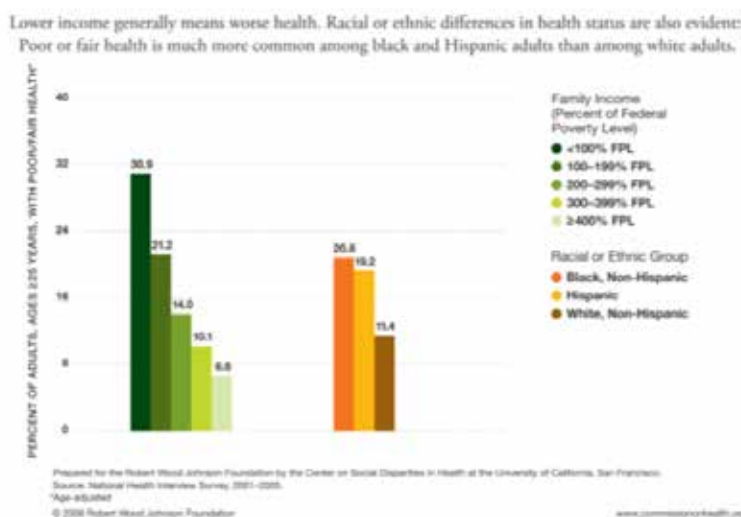
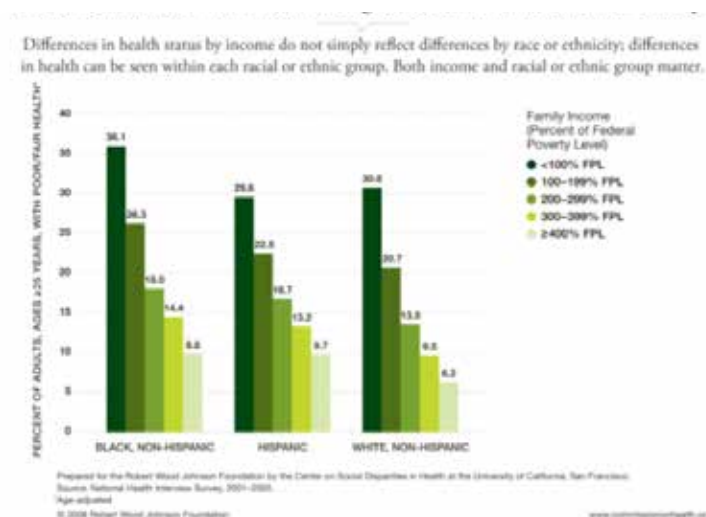


Figure 3: Relationship Between Income and Health Status

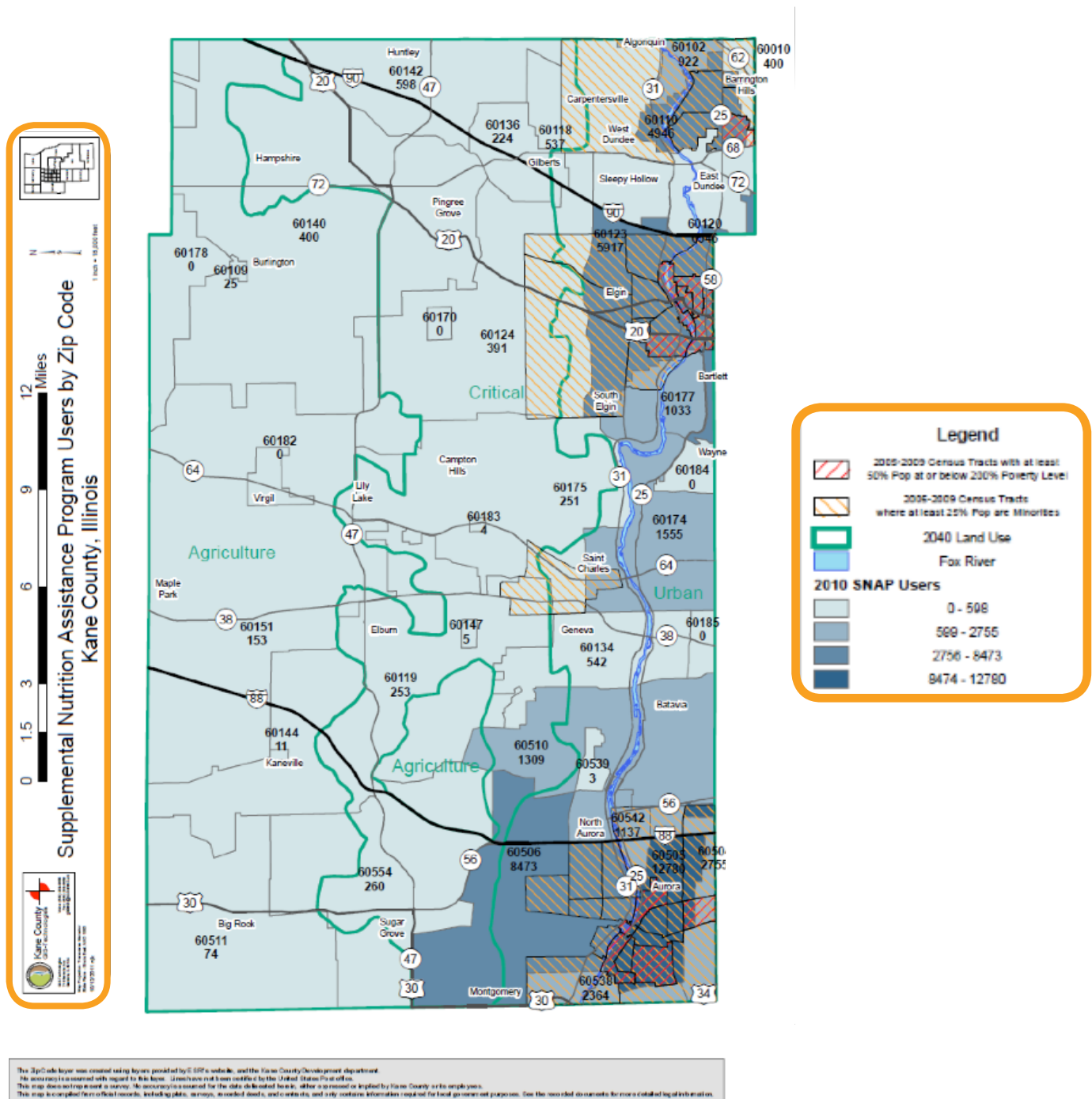
Income is Linked with Health Regardless of Racial or Ethnic Group



By analyzing Kane County health assessment data, HIA project staff is able to map out where low-income residents live in the county and compare the areas with the federal Supplemental Nutrition Assistance Program (SNAP) users and race/ethnicity. An examination of the map above shows that minority and low-income residents are primarily located in the urban corridor, where fresh food is least accessible. This corridor also has the

highest number of SNAP users. According to the United States Department of Agriculture's Economic Research Service, there are three census tracts identified as food deserts^{††} in the county: two in Aurora and one in Carpentersville.¹⁷ Prioritizing farms in Kane County that produce fruits, vegetables, meats and dairy will help bring fresh produce to those who need it most.

Figure 4: SNAP Users by ZIP Code



†† The USDA Agricultural Marketing Service defines food deserts as urban neighborhoods and rural towns without ready access to fresh, healthy, and affordable food.

1. Production of Local Foods for Human Consumption

Introduction

The first potential amendment to the Farmland Protection Ordinance is promoting the production of foods for human consumption both in Kane County and the surrounding metropolitan area. Currently, all land protected through the Farmland Protection Program is used to grow commodity crops which are not directly used for human consumption. The HIA Project team needed to answer several questions before proceeding with a recommendation for or against the production of foods for human consumption to see the current state of local food production, if there would be a market for the products, and if people would consume it. The original intent was to study a variety of food types (fruits, vegetables, meats, dairy), however most of the literature focused on fresh fruits and vegetables only. For this reason, only fresh produce is considered in this section of the report. Although data was collected on meat/dairy production, further research is necessary to fully consider the impacts of increased meat and dairy production and is out of the scope of this report.



Questions included:

- Does access to fresh fruits and vegetables increase consumption?
- Would an amendment to the current ordinance increase access to fresh produce?
- What is the use of Link at farmers markets in Kane County that accept it?
- How many Kane County farms currently produce fruits, vegetables, dairy, meats?
- Where do current farmers sell their product?
- How many farmers markets are in Kane County?
- How many Community Supported Agriculture (CSA) subscriptions are offered in Kane County?
- What types of fruits/vegetables are best suited for Kane County soils?

What the Literature Says

Research shows that people are more likely to consume produce when it's readily available. For example, several studies show that living near a supermarket increases consumption of fresh fruits and vegetables^{18, 19, 20, 21, 22} and for African-Americans, the increase in consumption was 32%.²³ The literature shows that increasing access to fruits and vegetables by lowering the price or changing the placement in supermarkets and corner grocery stores has a positive impact on consumption.^{24, 25} Story et al found that the presence of fruits and vegetables in the home increased consumption, even if household members did not care for them, and that the presence of stores selling healthful food contributes to healthy eating habits for neighborhood residents.²⁶

A report by the Economic Research Service (part of the U.S. Department of Agriculture) found that for every \$5 in new Supplemental Nutrition Assistance Program (SNAP) benefits, \$9 is generated in new economic activity.²⁷ Because more people are purchasing food products with the benefits, there is an additional effect on the employment numbers for agricultural, wholesale, distribution, and other sectors related to food production. The report found that for each \$1 billion in SNAP benefits, an additional 9,800 full and part-time jobs are generated.²⁸ SNAP benefits are used to purchase food and therefore recipients are able to shift some of their spending to other sectors and continue to increase demand for non-food products.

Existing Conditions

To begin looking at existing conditions, the first step was to find out where current fruit, vegetable, meat, and dairy producers sell their products and through which means (farmers market, CSA, etc.). If most goods are sold outside Kane County then an increase in production may have a lesser impact on resident health. Similarly, if there are few places to sell the products, farmers may not have an incentive to increase production.

The Kane County Producer survey showed that 85% of local producers sell more than half of their goods within Kane County and 46% sell more than 75% of their goods in Kane County.²⁹ When asked how they sell to the public, most sold their products through a combination of on-farm sales, farmers markets, and directly to restaurants or grocers.³⁰ Another question asked about plans to expand methods of sale and the top three responses were for on-farm sales, farmers markets, and direct to restaurants/grocers.³¹ Fit for Kids data shows there are a total of eight CSA subscriptions offered in the county and thirteen farmers markets. In 2013, four of these farmers markets are accepting Link cards.

Another survey conducted with Kane County Farm Bureau members showed that 57% produce corn and soybeans, 9% produce meats, 12% produce vegetables and fruit, and 4% produce dairy.³² The producer survey indicated that eight farms produce vegetables, five produce fruits/nuts, and six raise/sell beef, poultry, fish, eggs, milk or other protein products. Of the farmers who produce fruits, vegetables, meats, eggs, and grain products, 71% sell their goods at farmers markets.³³ Knowing the current state of agriculture in the county and where goods are sold provides an understanding of how an increase in local food production would potentially impact the producers. If the market is saturated, does it make sense to increase local food production? There are many commodity crop farmers in the county, but with only 25% producing food for human consumption, there appears to be room for more growers. The high number of farmers who sell at farmers markets means they are a popular way to get products to the consumer and with thirteen markets in the county, there are a variety of locations from which to choose. An economic analysis later in this report addresses these ideas.

Table 5: Change in Link Usage at the Aurora Farmers Market

	2011	2012
Total Customers	97	223
New Customers	46	101
Double Up Illinois Sales	\$1,350	\$3,500
Link Sales	\$1,474	\$3,741
Total Link Sales	\$2,824	\$7,241

To determine the potential for reaching vulnerable populations in Kane County, the HIA project team researched Link card usage at farmers markets in Aurora and Elgin. Being able to use the card at farmers markets ensures that recipients have access to the highly nutritious produce sold at the markets and may not be available in their neighborhood grocery/corner store. Aurora is the second largest city in Illinois and Elgin is the seventh largest, with 14% and 16% of residents below the poverty level, respectively.³⁴ The majority of Kane County residents live in these two areas and there is a need for access to fresh produce due to a lack of grocery stores in certain areas of the cities. An analysis of Link usage at the two Aurora markets is summarized in Table 5. It shows the increase in usage from one year to the next, both in number of customers and in sales at one of the farmers markets located in Aurora. By way of a grant program offered in 2011, this market was able to offer “double up” points for customers, stretching the amount of purchases that could be made using the Link card. The table indicates the extra money that customers were able to spend at the market.

At the farmers market located in Elgin, 2012 was the first year they accepted Link. This market allowed customers to use the Link equipment to make credit card purchases, increasing access to locally grown produce and meats for their non-Link customers as well. Their total Link sales were \$596, with an additional \$1,897 in credit card sales.

One final question relating to growing more local food is related to the Kane County climate and soils and if it can support growing fruits and vegetables for human consumption. Through an interview with the local University of Illinois Extension office, the HIA project team learned that there are many crops that will thrive in this climate and soil. Twenty-four # were identified as likely to consistently provide high quality, flavor, and high yields needed for widespread commercial production and seven others were identified as able to be grown in Kane County, but would not be of a high enough quality or flavor to grow for large distribution.³⁵ With this information, there is support the expanded production of fruits and vegetables in the county that would be suitable for the climate and soils here.

Community Perspectives

Based on a survey of various stakeholders in the county, if local food production was increased, the most important outcomes would be a stimulus of local businesses, retaining local dollars, and making local food more accessible for all Kane County residents.³⁶ Each of these outcomes would have a positive impact on health, based on the literature cited above and the economic analysis later in this report.

For a list of crops, see the Economic Analysis section

Another validation for an increase in local food production in the county is through a new beginning farmer class offered through the University of Illinois Extension, located in Kane County, where the university has test plots, and the main campus in Urbana-Champaign. This new program (focusing on fruit and vegetable production) will run for three years, with each class lasting one year. There is also a concurrent program for Hispanic farm laborers. At the St. Charles location, both classes combined total around 35 students. The class is offered in St. Charles but students come from all over. Students have plans to grow vegetables for various markets and with different motivations. In the future, the University plans to offer incubator space at the St. Charles test plots. Having students graduating from a program that focuses on fruit and vegetable production would provide new farmers who are ready to start a business and begin increasing local food production in the county.

Impact Predictions

With eight CSA subscriptions offered in the county, thirteen farmers markets, and many roadside/on-farm sales, there are several options for residents to access fresh produce directly from the grower and, according to the farmers, room for growth. Expansion into new markets would bring greater access to fruits, vegetables, meats, and dairy to the general population and to vulnerable populations and would have a positive impact on their health outcomes.

Recommendation

There are many other ways the county could help diversify its agricultural land use to increase food production for human consumption, achieving its overarching goals while also preserving the integrity of the existing farmland protection program.

The HIA results support the recommendation of creating a new Food and Farm Ordinance by Fall, 2013 and exploring policy opportunities which address the economic prosperity goal in the 2040 Plan to *"Encourage and promote farming, sustainable agriculture and local food production and their related businesses in Kane County including the production, sale and research of agriculturally related goods and services."*³⁷ Another recommendation, based on the findings, is to expand the county's policies, programs, and investments for agriculture protection to include small, local food producing farms and actions to increase access to fresh produce for schools, the Northern Illinois Food Bank's network of food pantries, farmers markets and other venues to improve access to local food, especially for the county's most vulnerable residents.

Many states and counties have used procurement preference policies to incentivize local food production and distribution to public institutions. This recommendation to include

policies and incentives for local growing would go a long way toward building markets and keeping county dollars circulating locally, certainly for the school system but also, as in the case of Woodbury Iowa, for county prisons and detention centers or other public institutions.

Based on the results of the HIA, there is a recommendation to establish a formal farm to school connection for local foods in at least three school districts by 2015. Supporting a farm-to-school program, in particular, seems very promising especially since there is state level support for this. In 2012, University of Illinois Extension hired an extension farm-to-school coordinator so extension educators can help communities create farm to school programs and this coordinator should be the expert helping three districts achieve the recommended goal. Elgin School District U-46 is an independent food service provider which already is at the table writing a farm-to-school grant. Between lunch and breakfast, U-46 serves nearly 50,000 meals per day. Its free and reduced school lunch program serves well over 70 percent of students and they participate in the Department of Defense (DoD) Fresh Fruit and Vegetable Program. This one school district alone would provide a reliable market to launch a county wide farm-to-school program. A local community college has an existing garden used by culinary students and in 2013, the garden began supplying food for its campus food service. This college should serve as a model for other educational institutions to start a farm to school program and the program will provide data on the progress of their initiative.

Building community connections between farmers and residents, combined with increasing the supply of fresh fruits and vegetables, also could help address Kane County's health disparities, such as having the second highest percentage of adults who are overweight and obese in the Chicago metro region. Incentivizing more local food production and connecting it to the school system also could have positive health impacts, especially on the 45 percent of children eligible for free and reduced price lunches in Kane County school districts. It also could provide opportunities for new and small farmers to add to the county's agricultural economy without competing for land with traditional crops like corn and soybeans. These connections should include Meet the Buyer/Meet the Grower events, supported by the Kane County Farm Bureau and other regional farm bureau offices. The Growing for Kane marketing campaign will also create more linkages between farmers and residents and should be led by Kane County and the Kane County Farm Bureau.

2. Inclusion of Farms of All Sizes in All Areas of the County

Introduction

The current Farmland Protection Program has historically been used to protect large, contiguous farms in the western third of the county to ensure the land stays available for agriculture use well into the future. Farms protected under this program primarily grow corn and soybeans. Farms growing fruits and vegetables for local consumption are often smaller in acreage and can therefore be located closer to population centers. The Kane County 2040 Plan identifies three major corridors within the county. The eastern-third, “Sustainable Urban Area” corridor, includes the Fox River and the major population centers of the county. The central “Critical Growth Area” corridor includes more suburban areas of the county as well as some rural areas. The western “Agriculture/Food Farm, Small Town Area” corridor includes some small towns but predominately includes thousands of acres devoted to agriculture. With appropriate zoning and other considerations, smaller and more urban farms could thrive in more populated areas of the county.

The HIA Project team looked at several questions concerning the inclusion of farms of all sizes in all areas of the county:

- What are the benefits of urban agriculture?
- Would growth of small farms in the Critical Growth area and Sustainable Urban Area improve access to fruits and vegetables for residents?
- What is the definition of a small farm?
- Would increasing farms in the urban areas of the county change property values?
- Is agriculture allowed as a land use in the municipalities?

What the Literature Shows

A review of recent literature shows that increasing the number of small farms in all areas of the county can provide benefits in several areas. Typically, small and medium size farms produce fruits and vegetables for local buyers and some regional demand.³⁸ An increased number of farms allows for a more diversified production of fruits and vegetables available to local residents and regional markets. Because of their ability to utilize smaller areas, these farms may be more likely to be found in the suburban and urban areas of the county.³⁹

A report by Policy Link addresses benefits of supporting urban agriculture policies and programs and lists the economic benefits it provides: creating jobs, increasing job skills and training, and attracting new businesses and reducing the cost of produce.⁴⁰ By allowing agriculture in

all areas of the county, with a focus on the urban corridor, the report indicates residents will have access to new job opportunities and an increase in fresh produce available in their neighborhoods through new businesses. One key to helping small volume farmers access large volume markets, like institutional buyers (ex: food service providers for hospitals or schools). Regional food hubs are a means of helping farmers reduce the cost of distribution and marketing and providing a way for them to reach larger markets by filling a void in the current food distribution system.⁴¹



A review of several sources shows there are many definitions of a small farm. The U.S. Department of Agriculture Economic Research Service defines a small family farm as having less than \$350,000 in gross cash farm income.⁴² The Washington State Department of Agriculture defines it as, “One where the farmer or farm family participates in the day-to-day labor and management of the farm, and owns or leases its productive assets.”⁴³ Finally, Small Farm Today magazine defines a small farm as one that is 179 acres or less in size or earns \$50,000 or less in gross income per year.⁴⁴ The definition of a small farm should be defined by Kane County as part of the new ordinance and is included in the recommendation section.

Farm Revenue: According to a report by Policy Link, small to medium sized farms can earn returns 200 to 250 percent higher than what they would earn if they sold to a wholesaler and may have less competition for produce at markets located in low-income neighborhoods.⁴⁵

In 2012, the Farm Credit Council published an updated report, *The Emergency of Retail Agriculture: Its Outlook, Capital Needs and Role in Supporting Young, Beginning, and Small Farmers*. The Farm Credit System has over 93 years

of experience lending to U.S. farmers. Its trade association, the Farm Credit Council, prepared this report for its 88 Farm Credit System retail lending Associations and for public policy makers, the public, and the media. The report defines Retail Agriculture as

*"...a revival of the small business potential of agriculture, where producers structure their businesses around a more direct relationship to consumers. Often producers retail their products directly to consumers or use marketing channels with a significant retail influence. The growth in the local and regional food marketing, organic production and other marketing-oriented forms of agriculture is a response to changing consumer trends in food demand. The agriculture sector's responsiveness to these changing consumer demands is most frequently observed via the growth in farmers markets, community supported agriculture, and other direct-to-consumer marketing arrangements; rising sales of natural, organic, local, and other specialty foods in grocery stores, and purchases of locally and regionally-sourced products by food service providers at public schools, universities, hospitals, and restaurants."*⁴⁶

Property Values: With the amendment to the ordinance proposing protecting farmland in all areas of the county, urban and rural, homeowners close to the protected land are likely to see an increase in property values as a result of the preservation of open space. Irwin completed a study to determine the effects of open space on residential property values and the results show an increase of values for parcels next to the open space: 2.6% above the mean for private land in agriculture easement, 1.2% for public land purchased by the government.⁴⁷ The increase or decrease in property value depended on the proximity of the open space to the parcel. The type of open space studied was cropland, pasture, and forest and, overall, there was an increase of value regardless of the type of space. In fact, what makes the land more valuable is residents' knowledge that the space is not going to be developed in the future.

Existing Conditions

The county's current Farmland Protection Program was developed in order to protect large farms of several hundred acres in close proximity to one another, in the western corridor of the county. As described earlier, the existing program has resulted in the protection of over 5,000 acres of farmland from 30 farms.

Currently, in Kane County, the majority (64%) of municipal comprehensive plans offer agriculture as a specific land use (out of 25 municipalities represented).⁴⁸ Similarly, most (63%) municipalities surveyed also indicated that agriculture is an allowable zoning classification.⁴⁹ These survey results

indicate that while Kane County municipalities allow agriculture, there is also room to expand a local foods ordinance in municipalities that currently do not support agriculture through zoning and comprehensive planning policies.

Community Perspectives

When surveyed about what they perceived to be the most effective incentives to increase urban agriculture in Kane County, existing producers in Kane County and attendees of the Kane County Farm Bureau's annual Leadership Picnic identified tax credits such as discounted property taxes in urban areas and creating policy to allow rental / contract of publicly owned lands for local food production as the top options.^{50, 51}



In a separate survey, 53% of existing Kane County producers surveyed indicated that adding the ability to support farms with smaller acreage would be the number one way to make local food production more feasible. Similarly, survey responders indicated that policies encouraging urban agriculture would effectively promote local food production.⁵² The Producers who responded to the survey were primarily located (85%) in the central region of the county. However, the majority of commodity growers and participants in the Kane County Farmland Protection Program are located in the western region of the County.

Impact Predictions

Increasing farms as an allowed and incentivized use in urban areas of the county would provide new job opportunities for urban residents, increase access to healthy food options for existing residents of Kane County and would improve property values for current land and home owners.

Based on input from existing producers and other stakeholders, there appears to be strong demand for additional support for smaller local food producers. A program providing support for existing producers to expand production and for new entrepreneurs to enter the market in all areas of the county would likely be met with strong interest from producers and buyers.

Recommendation

Supported by available literature and stakeholder input, including the American Farmland Trust and the Kane County Farm Bureau, the HIA recommends a new and complementary Food and Farm Ordinance should be created to stimulate the growth of fruit and vegetable farms in all areas of Kane County. This recommendation comes after conversations with stakeholders and public presentations about the proposed amendment caused concern that it could negatively impact the current program and funds available for it. Others were confused as to why the HIA project team was creating an amendment when what was described was actually a new program that should have a separate ordinance. The HIA project team therefore recommends a new ordinance.

The existing Farmland Protection Ordinance 01-67 is successfully meeting its goals by protecting large blocks of contiguous acreage in the western part of the county. Federal Farm and Ranch Lands Protection Program (FRPP) dollars have been used to match local investment to save 5,000 acres of the county's finest agricultural soils. Given the county's dependency on the FRPP program for matching funds, it must be careful to avoid anything that might jeopardize future funding.

The creation of a new Food and Farm Ordinance, following on the successful model of Ordinance 01-67, should offer technical assistance; financial incentives and agreements with property owners to grow fresh produce, meats, and dairy for both the regional market, local consumption and to reach the vulnerable and underserved population.

A new program should include location criteria for all of the eastern and central parts of the county currently not prioritized in the farmland protection program. While the existing Farmland Protection Program currently prioritizes farms in the western agricultural area, a new ordinance can set its guidelines and ranking criteria to increase eligibility of qualifying parcels which are closer to the urban core and those likely to support food production. Setting a new program policies and selection practice to include farms of varying sizes and in rural and urban areas throughout the county could strengthen the county's agricultural land base and support local food production as long as it was done cautiously and in a way that did not weaken the integrity of

the existing farmland protection program. It would make sense to limit this provision to a specified goal, such as 1,000 acres. In addition, the definition of "small farm" must be defined by the Kane County Board when establishing criteria for participation in the program.

To facilitate distribution of locally grown product, Kane County, Kane County Farm Bureau, and Northern Illinois Food Bank should work together on studying the possibility of locating a food hub or other infrastructure in Kane County. The hub will provide Good Agricultural Practices (GAP) certification, packing, and distribution once a viable institutional market or other kinds of intermediate markets have been established. Recently, Kane County partnered with Northern Illinois Food Bank to request federal community project funding to explore the economic feasibility of a food hub to explore this idea in more depth.

3. Use of Term Agreements

Introduction

An "easement" is a tool for conserving land. It is a legal agreement between a land owner and a land trust or government agency that limits the use of the land in order to protect it for specific uses. Often easements allow landowners to hold on to and use their property but permanently remove development rights in exchange for tax benefits. Kane County has had agricultural conservation easements since 2001.

Easements can be perpetual or for a specified term of time. This section of the Assessment looks at how the use of term-limited easements would impact the preservation of farmland in Kane County, particularly for the production of fresh vegetables, fruit, and meats.

The HIA project team looked at several questions relating to the option of using term agreements:

- What is the impact of the use of term (vs. perpetual) agreements on the number of new farmers?
- Would the use of term agreements be feasible in Kane County?

What the Literature Says

Given the main outcomes of concern (increase in production, sale, and consumption of locally grown food; increasing healthy food available for vulnerable populations; and economic impact for farmers) the HIA Project team felt that being able to discuss the impact that the use of term easements might have on the number of new farmers would be the best proxy indicator. However, a review of

the agricultural, planning, and public health peer-reviewed literature did not turn up any robust studies about the use of term easements. In the grey literature (government publications and well-researched advocacy reports), there are examples of programs across the country that use term easement or agricultural covenants for vegetable and food production.

Existing Conditions

Kane County has incorporated the use of perpetual easements into the Farmland Protection program for twelve years. As part of these easements, the land is permanently protected as agricultural land and cannot be used for development. The easement is connected to the land and should the protected parcel change owners, the new owners are bound to it. At the end of 2012, 30 farmers have entered into easement agreements with Kane County preserving approximately 5,000 acres of farmland, in perpetuity. To date, Kane County has not offered term agreements for preserving farmland; although the authority of ordinance 01-67 grants this authority and demonstrates the feasibility of using term agreements.

Community Perspectives

According to local farmers surveyed, two of the main barriers to local food production are the cost of available land and access to land.^{53, 54} Should more land be available for growing local produce, the same survey respondents anticipated that increased selling of local produce would stimulate local business and help retain local dollars. This survey also asked farmers to choose which policy would be a “good idea for Kane County to pursue” and the top response was: Allow rental of public and government owned land for commercial growing of local food. This response indicates that respondents believe shorter-term agreements would decrease the barrier of access to land for new farmers.

Impact Predictions

Given the obstacle cited by the farming community of needing short-term access to land to begin farming for fresh produce, it is likely that offering term agreements would increase the number of farmers entering the field. As found in a report from the National Center for Public Policy research, the use of term easements would result in more farmers participating in the Farmland Protection Program because it offers more flexibility.⁵⁵

Recommendation

To address land access issues, the HIA recommends the county consider purchasing suitable farmland under the authority of the existing farmland protection ordinance which allows the county to purchase land in fee, and put

out a Request for Proposals (RFP) to lease it to local food producing farmers – or even create an incubator program to train beginning farmers in local food production techniques. This would not require any changes to the ordinance but could go a long way toward supporting local food production. Based on the feedback from current farmers, the HIA recommends the county create an inventory of public land, including a map, and explore leasing public land for farmers markets, a food hub or other infrastructure to help local producers market their products as well as for local food production itself. A final recommendation is to explore the use of term easements to increase participation in the program and encourage local food production.



4. Economic Analysis

Introduction

The proposed Food and Farm Ordinance for Locally Grown Food in Kane County will not only improve the health of Kane County residents, it will provide many economic benefits. The ordinance can lead to less expensive food for residents, it will create local jobs, it will stimulate agriculture related industries, it will increase agricultural revenue and it will provide a mechanism to capture federal and other dollars. The potential increase in jobs and income for Kane County residents also has the ability to reduce the health disparities found throughout the county.

Several questions relating to economic impacts were considered, including:

- What are future expansion plans for Kane County farmers?
- What is the economic growth potential for agriculture in Kane County?

- What is the business growth potential related to local food production?
- What policies, programs and incentives can be used in the identified areas for supporting economic growth related to local foods?

Literature Review

The Ready to Grow: A Plan for Increasing Illinois Fruit and Vegetable Production Action Plan and Feasibility Study, concludes:

*“Supply is currently falling far short of wholesale level demand for Illinois grown fruits and vegetables. Demand will only increase with institutional buyers responding to consumer demand and pursuing the Illinois Food Farms and Jobs local procurement goal of 20 percent by 2020. When asked what barriers keep them from scaling up to meet this demand, growers were very forthcoming with obstacles and possible solutions. Growers were also very interested in actively participating in the process to remedy the barriers, the most significant of which is a packing house that can resolve a myriad of barriers. This project highlighted that Illinois growers are indeed ready to more closely meet the wholesale level demand for Illinois grown fruits and vegetables. Through barrier mitigation, especially proceeding with a business plan for packing house development, the Illinois Food Farms and Jobs Council and the Illinois Specialty Crop Industry can help bridge the supply gap and realize the many benefits of a thriving local food system.”*⁵⁶

Additional literature explains that demand for local foods is strong and expected to continue. According to a National

Restaurant Association survey, three of the four top “Hot Trends for 2012” included: locally sourced meats and seafood, locally grown produce, and hyper-local sourcing (e.g. restaurant gardens).⁵⁷

In a survey of producers in Kane County that produce fruits, vegetables, dairy and meat: the respondents noted that they plan to expand their production to the following top three markets:.

- On Farm Sales
- Direct to Restaurant or Grocers
- Farmers Markets

Figure 5: Sustainable Local Food System



Table 6: Significant Barriers to Local Food Production

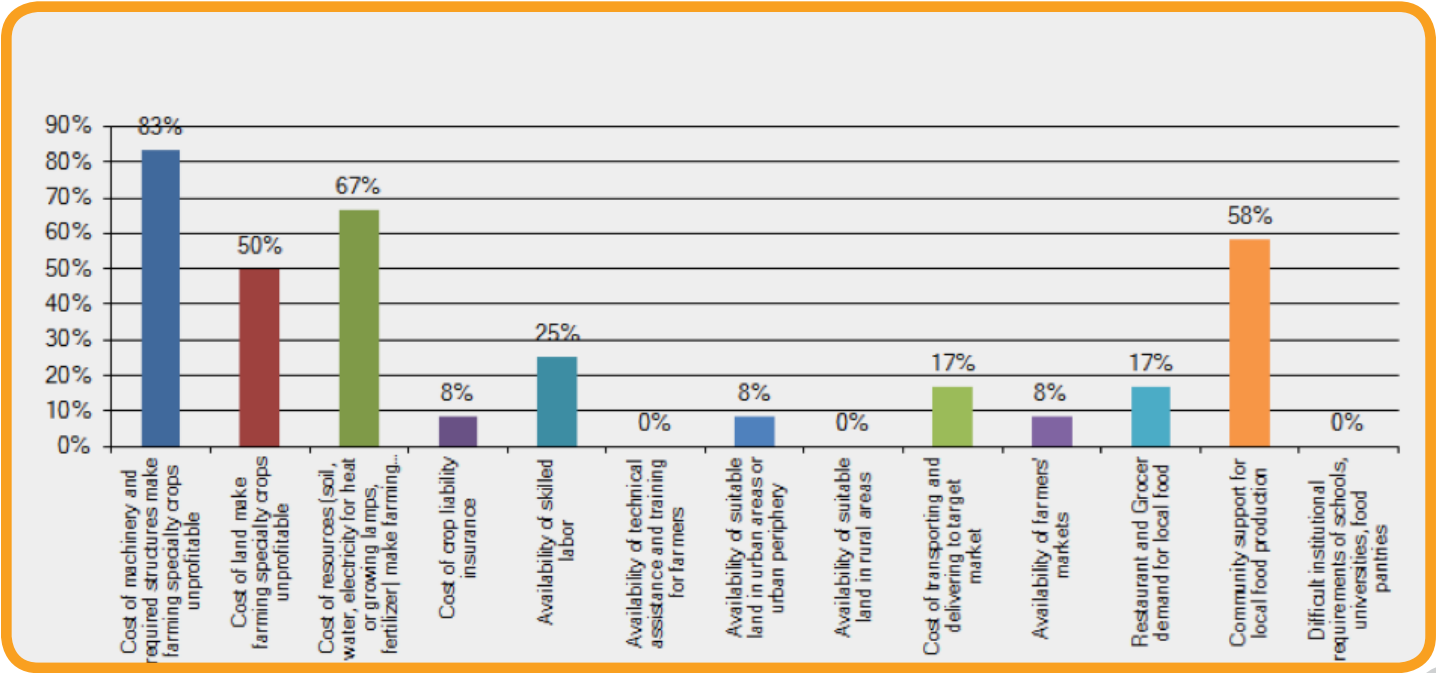


Table 7: Number and Type of Workers Employed by Kane County Producers

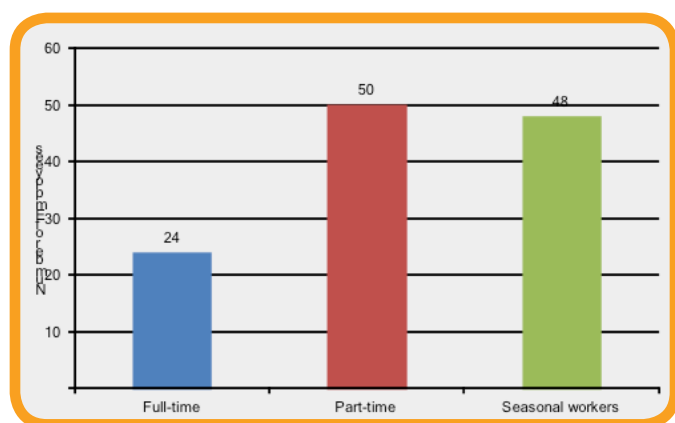


Table 8: Crops Evaluated in Economic Analysis

24 Crops Evaluated

Apples	Leaf lettuce
Asparagus	Mustard greens
Broccoli	Onions
Cabbage	Peppers
Carrots	Pumpkins
Cauliflower	Raspberries
Collard greens	Snap beans
Cucumbers	Spinach
Eggplant	Squash
Garlic	Strawberries
Grapes	Sweet corn
Kale	Tomatoes

Top barriers to local food production cited by producers are in order of response:

- Cost of machinery and required structures make farming specialty crops unprofitable.
- Cost of resources (soil, water, electricity for heat or growing lamps, fertilizer) make farming specialty crops unprofitable.
- Community support for local food production.⁵⁸

Collectively, the 13 producer survey respondents employ 24 full-time, 50 part-time, and 48 seasonal workers.⁵⁹ The 2007 Census of Agriculture reports Kane County has 1,724 hired farm labor employees, which includes all farms – commodity and specialty.⁶⁰ If the 13 farms that responded to the survey employ 122 people, expanding farm operations and increasing the number of farms in the county will have the potential to employ many more people.

Existing Conditions

Agriculture in Kane County primarily consists of corn and soy bean production. According to the 2007 Census of Agriculture, of Kane County's 192,372 acres of farmland, 114,809 acres were corn harvested for grain and 46,546 acres were soybeans. Only 1,180 of the county's acres were harvested for vegetables and 72 acres for orchard fruit.⁶¹ Approximately 0.5 percent of Kane County's farmland is harvested for fruits and vegetables compared to a 2% national average. As a result, Kane County residents must import virtually all of the fruits and vegetables they consume. Given the growing season and other agronomic factors, local farmers could replace a percentage of – but certainly not all these imports – with local production. Assuming some farmers want to produce fruits and vegetables and would successfully compete against those imports, a small shift in agricultural production would keep local dollars circulating locally, multiplying consumer spending throughout the area economy, benefiting jobs, the economy and public health.

Chicago Metropolitan Agency for Planning (CMAP), in its Go To 2040 Plan publications, notes that \$46 billion is spent annually on food that leaves the state of Illinois and \$14 billion of those dollars are spent on fruits and vegetables alone.⁶² Kane County, along with the rest of the CMAP region, is not capturing much of this local food dollar. This means money that could be spent locally on food production is spent out of state, benefiting other producers, along with the costs associated with transporting the food into Illinois.

⁵⁵ See Appendix I for more information about American Farmland Trust's work on the report and the economic analysis completed by Dave Swenson, Associate Scientist in Economics at Iowa State University.

Steve Ericson of the Northern Illinois Food Bank (located in Kane County), who procures foods for the food bank's food pantries; has stated his preference to buy locally grown food which will save significant dollars that are currently being spent on trucking fresh produce in from out of state.⁶³

Community Perspective

The USDA analyzed resident perspectives on locally grown food in a report titled, *Local Food Systems: Concepts, Impacts and Issues*. According to this report, consumer motivation for purchasing locally grown food is based on perceived quality, freshness of local food, and support for the local economy.⁶⁴ The report also noted that consumers who are willing to pay higher prices for locally produced foods and place an importance on product quality, nutritional value, support for local farmers, and their opinion that the methods for raising the product were environmentally safe.

Impact Predictions

American Farmland Trust (AFT) was hired to conduct research and suggest recommendations to inform local decision makers about the amendment.⁶⁵ Part of their work included an analysis of an array of fruits and vegetables that can be produced competitively in Kane County, based on previous work on multi-state, state-wide, and regional food production opportunities. The analysis is sensitive both to regional market demand and local capacity to produce fruits and vegetables not only for the county but also to serve nearby metropolitan demand. Kane County's agriculture and economy do not exist in isolation from its neighbors.

Based on the recommendation of Richard Wierzerl, University of Illinois Professor and Extension Entomologist, the group of 24 crops chosen to act as a representative bundle of possibilities for the local market is shown in Table 8. It reflects any reasonably similar mix of fruits and vegetables which could be produced competitively in the county and where there is a reasonably similar market demand.

Considering potential annual per capita demand and the percentage of that demand that could be met by local producers, the analysis found it would require 2,496 total acres to produce this bundle of fruits and vegetables in Kane County, or only 1.7 percent of total county cropland. The farm sales value of this production would be just under \$11 million annually. For illustrative purposes, the potential retail value of the production of over \$40 million is presented as well. The values are reflective of national retail average prices for 2011.^{***} (Table 9)

In a more advanced analysis, opportunity costs were

measured. It was important to measure opportunity costs because the 2,496 acres that will be needed to meet demand cannot all be on currently unfarmed land. When measuring opportunity costs, the potential conversion of existing corn

Table 9: Potential Acres Required and Sales Value of Selected Crops

Kane Co. population	515,269
Acres required to meet seasonal fresh fruit and vegetable demand	2,496
Farm sales value in 2011	\$10,937,310
Farm sales per capita	\$21.23
Potential retail value 2011	\$40,579,814

and soy bean cropland to fruit and vegetable cropland was examined. This analysis used the IMPLAN IO model described in Appendix I. The model measured a range of scenarios. Generally, over the three scenarios, it was found that increasing fresh fruit and vegetable production would not have a significant impact on conventional agriculture production in Kane County. Moreover, given the fact that fruit and vegetable production generates higher output and value added per acre over existing conventional activities, incremental gains in fruit and vegetable production will result in greater regional agricultural sector GDP. The full report can be found in Appendix J.

After considering all direct, indirect and induced consequences, the potential shift of 1,000 acres of corn and soybeans (less than 1 percent of the county's total cropland acres) to fruit and vegetables, weighted respectively, at 680 acres and 320 acres, would be a net positive of 9 jobs, \$.853 million in labor income, \$.809 million in value added, and \$2.81 million in output. These figures account for the losses that would be sustained to the regional economy from the reduction of corn and soybean production: \$1.58 million in total output, \$.708 million in value added, \$.338 million in labor income and 26 jobs. But it also accounts for the gains from fruit and vegetable production on those 1,000 acres of \$4.39 million in output, \$1.52 million in value added, \$1.19 million in labor income and 44 jobs. Thus, the total job shifting is positive in favor of the more labor intensive and higher income producing fruit and vegetable alternative.

*** The calculated retail values reflect typical grocery store retail prices, not farmers' markets or CSA prices.

Table 10: Opportunity Costs of Conventional Crop Land Converted to Fruit and Vegetable Production

	Corn + Soybean Production Losses	Fruit + Vegetable Production Gains	Net Difference
Output \$	(1,576,895)	4,385,622	2,808,727
Value added \$	(708,257)	1,516,932	808,675
Labor income \$	(338,500)	1,191,216	852,716
Jobs	(13)	22	9

Nonetheless, the total shifts in terms of acres or total output, given the scenarios described above, are very small relative to the size of the current agricultural economy. Table 10 displays the opportunity costs per 1,000 acres of crop production shifts.

The analysis examined the larger regional market, measuring the demand for local food and the number of acres that would be expected to fulfill the demand. Kane County, at 2,496 acres, is just 4 acres away from the highest category. As stated before, this is a small amount of the total number of acres in agriculture production today. Figure 6 shows the regional market and the expected number of acres, by county, that would be necessary to fulfill the demand.

Recommendation

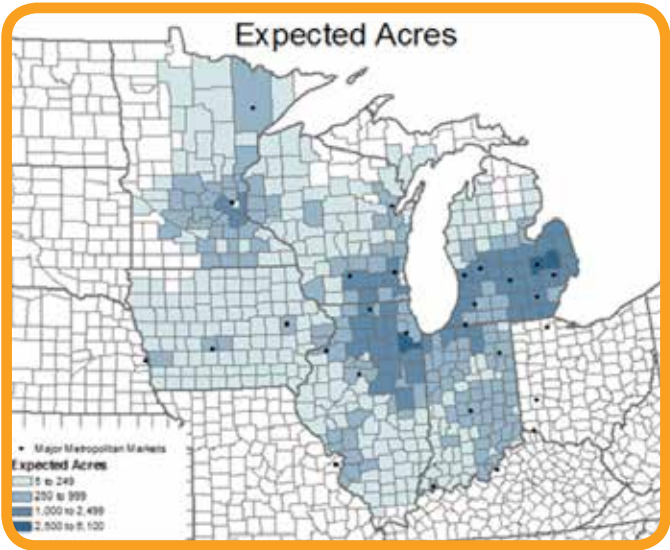
As was shown by the regional economic impact assessment, it would take very little Kane County farmland to achieve a vibrant local food and farm economy. Roughly 2,100 acres of fresh fruit and vegetable production would achieve \$15 million/year in regional economic contribution and comprise only 1.5 percent of the county's total harvested acres. Assuming much of this production would take place on the eastern side of the county where most of the population is concentrated, while not competing with traditional commodity production, this modest level of agricultural diversification likely would build public support for farmland programs by creating tangible and meaningful personal connections between residents and farmers. Also, by demonstrating that farmland protection and local food production has multiple public benefits: local food, new jobs, improved health as well as open space and a healthy farm economy, there is likely to be buy-in from the residents.

The county could create an agricultural development

authority or hire an agricultural economic development specialist to secure funding for infrastructure development and to be a one-stop-shop for information about loans, grants and other public and private incentives to support specialty crop and other local food production. The authority would need to be structured as a public/private entity and be incorporated as a non-profit to receive private funds (from USDA, agri-business, technology, health, banks etc.) and make loans and potentially grants to incentivize local food production and the infrastructure needed to get it to market.

Even without an economic development authority, the county could do several things. It could point farmers, who wish to transition to local food production, to state and federal programs. For example, USDA-NRCS makes grants through EQIP Seasonal High Tunnel Initiative to provide financial and technical assistance to farmers to extend the growing season for high value local food crops in an environmentally sustainable manner. The county could help farmers apply for this program or even provide additional funding if necessary. The county also could create an agricultural loan fund in partnership with a bank, lending institution or state economic development authority. At least two models exist to make loans to small and mid-sized farms which serve local or regional markets. One provides capital to a lender who, in turn, issues a promissory note and commits to lend the borrowed capital. In the other, money is posted as collateral to the benefit of a lending partner that uses its own capital to make loans up to an agreed-on amount. In either model, farmers can use these loans for working capital, capital needs and other improvements both for production and for value-added enterprises.

Figure 6: Expected Number of Agriculture Acres Required to Meet Regional Demand for Local Food



+ MONITORING AND EVALUATION

Monitoring of the short, intermediate, and long-term impacts of the amendment to Farmland Protection Ordinance will be critical to evaluating the relative success of the policy change in improving health. The health impact assessment identified several key indicators that may be affected by changes to the ordinance.

Key Indicators to Track

Indicators	Data Sources	Monitored by	How often updated?	Track for-
How many new farms growing food for human consumption are in the program?	Kane County Farmland Protection Program	Kane County Development and Community Services Department	Ongoing	10 years
Number of vendors selling fresh produce, meats, dairy, grains at farmers' markets	Farmers' market survey	Kane County Health Department	Will establish an annual review with farmers' market managers	5 years
Unemployment rate	Illinois Department of Employment Security	Kane County Health Department	Monthly, annual report	5 years
Poverty rate	Census Bureau	Kane County Health Department	Varies, depending on survey tool	5 years

Pounds of food donated, amount of money donated	Northern Illinois Food Bank, KC Farm Bureau	Kane County Development and Community Services Department	Annual 10 years	10 years
Number of schools serving locally grown food in cafeterias	KC Fit for Kids, School districts	Kane County Health Department	Ongoing	10 years
Percent of Kane County adults and children eating recommended amount of fruits and vegetables per day	2011 Kane County Community Health Survey, BRFSS, future community health assessments	Kane County Health Department	Varies, could be annual	10 years
Obesity rate for adults and children	2011 Kane County Community Health Survey, BRFSS, future community health assessments	Kane County Health Department	Varies, could be annual	10 years
Rate of chronic disease	Illinois Department of Public Health	Kane County Health Department	Annual	10 years
Amount of Link transactions at KC farmers' markets	Farmers' market managers	Kane County Health Department	Annual	5 years
# of Farmer's Markets, Farmstands, CSAs, Food Coops, grocery stores selling local produce; usage of Farmer's Markets (attendance)	County Business Patterns; Bounty of Kane; managers of farmer's markets, producer survey	Kane County Development and Community Services Department	Annual	5 years

In January 2013, the Kane County Board approved the creation of an Agriculture Committee to focus on issues impacting the agriculture community within the county.

This new committee is a standing committee of the Board and meets monthly to review and recommend policy and programmatic issues for consideration by the full board. Informed by the findings of the health impact assessment, the Agriculture Committee will vote on amending the current Farmland Protection Ordinance in 2013. Going forward, data on the key indicators identified in the HIA will be presented regularly to the committee to inform and evaluate the full impact of the amendment.

The Kane County Development & Community Services Department is the primary staff department reporting to the Agriculture Committee. As such, they will be responsible for

working with the Chair of the committee to set the agenda for future meetings to include monitoring the impact of the ordinance change. The Development Department will work in close collaboration with the Kane County Health Department to collect, analyze, and present data on the key indicators to the Agriculture Committee in written and oral updates. The Health Department is responsible for the collection of health data indicators and the Development and Community Services Department is responsible for the collection of data regarding participation in the Farmland Protection program and land-use in Kane County. This information is available on the Kane County website in the Agriculture Committee meeting minutes and agenda packets.

Updates on the programmatic, economic and health impacts of the new ordinance will be shared with the Agriculture Committee at least every six months. This schedule supports

ongoing data collection and several months of implementation and monitoring between updates while still allowing for regular review and discussion of the key indicators. In addition to updates provided to the Agriculture Committee, Kane County will provide updates to stakeholders involved and interested in the HIA process. Updates on the key indicators and outcomes will be shared through electronic newsletters created by Kane County staff. This information will also be included on the Health and Development department's websites.

Evaluation Plan

As part of the Health Impact Assessment project, Kane County contracted with Northern Illinois University to conduct an evaluation. The NIU evaluation is composed of two components, a process evaluation and an impact assessment. The process evaluation will gauge the Kane County HIA's quality according to established standards and Kane County's plan for carrying out the HIA; the impact evaluation will assess the HIA impact on decision making and implementation of proposed recommendations including assessing changes in health status and health determinants, insofar as the changes are evident during the life of the evaluation, as the decision is implemented.

The process measures used in the evaluation will include established HIA practice standards.^{†††} The evaluation has a knowledge-building function given it will identify and examine the tactics that appear to be most successful in achieving the policy goals the HIA sets out to address. Eight questions will be used to guide the evaluation.

- 1 What essential elements of the HIA process contributed to the success or failure of the project during various phases of implementation? What challenges and opportunities for improvement occurred?
- 2 Were important milestones and key activities met and fully carried out as specified in the funding proposal?
- 3 Was the HIA conducted according to established standards? What analytic methods were used? Were the analytic methods used appropriately?
- 4 In what ways were stakeholders identified and engaged? Was stakeholder engagement appropriate to the task of completing the HIA?
- 5 How effective were the training and technical assistance and what ways, if any, could they be improved?
- 6 What impact did the HIA have on decision-making and implementation of the proposed recommendations up to the time that the evaluation is conducted?
- 7 What additional impact(s), if any, occurred beyond the HIA objectives?

- 8 What impact or potential impact does the HIA process have on population health and the 2040 Master Plan's policies of *Healthy People, Healthy Living, and Healthy Communities*?

The evaluation team will use the following primary data collection techniques: content analysis of written program documents, testimonials of program effects from key participants and stakeholders, focus groups, key informant interviews, direct observation of project activities and events, and questionnaire based surveys. The NIU evaluation team will use an extensive set of tools and resources developed by the Human Impact Partners to guide the health impact assessment process, including sample evaluation questions covering all eight key HIA activities.

Findings from the evaluation will be shared with Kane County staff involved in the Health Impact Assessment Project. Findings and recommendations for future Health Impact Assessment projects will be shared with staff and policy makers in Kane County, including the Regional Planning Commission, Health Advisory Committee and Farmland Protection Commission. An evaluation report will be developed that can be shared with interested stakeholders and other organizations interested in the evaluation of a Health Impact Assessment. The report will be available in September 2013 and posted to the HIA website as an addendum to the full HIA report.



^{†††} See: <http://www.humanimpact.org>. Accessed: November 25, 2012.

+ CONCLUSION

The Growing for Kane Health Impact Assessment findings directly contributed to how the new Growing for Kane program was presented to Kane County Board Members. The HIA report recommendations were based firmly on data about the current health of County residents and the potential for policy and program changes to improve the future health of the community. Stakeholder input was instrumental in changing the original proposal, an amendment to the existing Kane County Farmland Protection Ordinance, to creating a new, sister ordinance. This ensured the history of the existing program would remain intact and current funding streams would not be jeopardized by a change in program parameters. The separate program also clarified that the current program would continue for residents who are interested in participating in it. A separate economic analysis of local food production was completed based on requests from stakeholders, something the project team had not considered prior to stakeholder engagement.



The evaluation showed that Kane County “successfully conducted a high quality HIA” and all persons interviewed for the evaluation found the HIA project useful. The evaluators concluded that the HIA process increased the awareness of health implications of this policy decision and in the future, residents would continue to see how policy changes can improve health outcomes. A copy of the full evaluation report is available at: www.kanehealth.com/hia.htm.

Overall, the HIA met its goal of testing assumptions related to changes in agriculture policy in Kane County and providing recommendations to enhance the health promoting aspects of the policy. The result is a new program for farmers to increase their production of locally grown fruits and vegetables for all residents of Kane County on farms of any size, located anywhere in Kane County. The HIA also included an economic analysis of local food production in Kane County and how it affects the regional market, which was a key finding supporting the creation of the Growing for Kane program. Kane County is committed to the further integration of health and land-use and intends to continue using HIA as a tool to bring health into policy and program decision-making.

On August 13, 2013, the Kane County Board unanimously adopted Resolution #13-240, the Growing for Kane Program. This resolution would not have passed without the findings from the HIA, including stakeholder input and support for the program. The Growing for Kane program development, which is underway, will ensure the specific health impacts identified in the HIA report will be improved through the program.

A formal evaluation of the HIA was conducted by Northern Illinois University and used three data collection methods:

- Semi-structured interviews with Kane County Board members, Kane County staff, and Kane County Farm Bureau and Northern Illinois Food Bank stakeholders
- Content analysis of the HIA
- Direct observation of meetings where the program was discussed

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Adopting + Implementing the Kane County Agricultural Conservation Easement + Farmland Protection Program

WHEREAS:

- The County has the authority to purchase real estate for open space purposes pursuant to 55 ILCS 5/5-1005.
- The County is authorized to acquire land for purposes of flood plain protection, flood water run-off, detention ponds, and other public grounds and may regulate the use of these public grounds for any public purpose pursuant to 55 ILCS 5/5 –1049.
- The County is authorized to acquire land for the purpose of protecting the water supply pursuant to 55 ILCS 5/5-15009.
- The State of Illinois has authorized the Illinois department of Conservation to assist local governments in the acquisition of open space pursuant to the Open Space Lands Acquisition and Development Act (525 ILCS 35/1).
- The Kane County Board find and determines that the adoption and implementation of the Kane County Agricultural Conservation Easement and Farmland Protection Program is necessary in order to maintain and preserve the natural beauty of Kane County.
- Adoption of the Kane County Agricultural Conservation Easement and Farmland Protection Program will assist in promoting responsible managed growth patterns through intergovernmental planning agreements in conjunction with the Kane County 2020 Land Resource Management Plan, the Kane county Historic Preservation Ordinance, the Kane County 2020 Transportation Plan, and the Kane County Storm water Management Ordinance.

Now therefore, be it ordained by the Kane County Board that it hereby adopts the following:

Section 1.

An ordinance to create the Kane County Agricultural Conservation Easement and Farmland Protection Program and to establish the Kane County Conservation Easement and Farmland Protection Program pursuant to the Illinois Property

Conservation Rights Act, 765 ILCS 120/0.01 et seq., to read as follows:

1. Definitions. In this Ordinance:

- A.** Board means the Kane County Board.
- B.** Conservation easement means a holder's nonpossessory interest in real property within Kane County imposing any limitation or affirmative obligation the purpose of which includes protecting viable farm operations and farmland to maintain the rural character of Kane County, permanently preserving scenic vistas and environmentally significant areas, including wetlands, lakes, streams and wood lots, creating and preserving "Buffer zones" around significant environmental areas and agricultural areas, protecting Kane County for encroachment of neighboring cities and villages, restricting land divisions, retaining or protecting natural, scenic or open space values of real property, assuring the availability of real property for agricultural, forest recreational or open space use, protecting natural resources maintaining or enhancing air or water quality, preserving the historical, architectural, archaeological or cultural aspects of real property.
- C.** Commission means the Kane County Agricultural Conservation Easement and Farmland Protection Commission.
- D.** Conservation interest means a holder's interest in a conservation easement, a third-party right of enforcement in a conservation easement of fee title interest in real property.
- E.** Nonprofit conservation organization means a nonprofit corporation, a charitable trust or other nonprofit association whose purposes include the acquisition of property for conservation purposes and that is described in Section 501(c) (3) of the Internal Revenue Code and is exempt from federal income tax under Section 501(a) of the Internal Revenue Code.

2. Land Trust Commission

A. Creation. There is hereby created the Kane County Agricultural Conservation Easement and Farmland Protection Commission (hereinafter the "Commission").

B. Duties. The Commission shall be responsible for general supervision of the Agricultural Conservation Easement and Farmland Protection Program as set forth in this Ordinance, including the following:

- The Commission shall maintain contact with public and private agencies to maximize the resources and coordinate efforts to preserve the rural character of the County.
- The Commission shall determine the interest of owners of land within the County at least annually, to donate or sell interests in real property for the purpose of the Agricultural conservation Easement and Farmland Protection Program.
- The Commission may recommend selection criteria and may recommend the acquisition of interests in specific parcels of real property to be acquired by the County for agricultural protection purposes.
- The Commission may recommend changes to the Kane County Agricultural Conservation Easement and Farmland Protection Program and suggestions as to how the Kane County Agricultural Conservation Easement and Farmland Protection Fund acquisition program may be integrated with the Kane County 2020 Land Resource Management Plan, the Kane County Historic Preservation Ordinance, the Kane County 2020 Transportation Plan, and the Kane County Storm water Management Ordinance and other local and regional land use plans.
- The Commission may conduct public meetings or public hearings as it determines necessary or convenient to its work.
- The Commission may prepare any application forms necessary for the Agricultural conservation Easement and Farmland Protection Program and prepare, review and recommend any grant applications for State and Federal grants.

C. Membership. The Commission shall consist of nine (9) voting members consisting of:

- The Chairman of the Kane County Board.
- The Chairman of the Kane county Development Committee.

➤ A representative of the Kane County Farm Bureau.

➤ Six (6) members appointed by the County Board Chairman with the advice and consent of the Board, appointed for terms expiring on June 1 following the third anniversary of their appointment. All members shall be electors of the county and, to the extent practicable, include persons with backgrounds and experience in agriculture, finance, conservation or planning.

➤ The Chairman of the Kane County Regional Planning commission and the Chairman of the Kane County Historic Preservation Commission shall be ex-officio members but shall have no right to vote and shall not be included in determining a quorum.

D. Officers. The Commission shall have the following officers:

- The commission Chair shall be appointed by the Chairman of the Kane County Board and shall preside at all meetings of the Commission.
- A Vice Chair shall be elected by a majority vote of the Commission at the first meeting of the Commission to serve for a term of three (3) years.

E. Rules of Procedure. The Commission may adopt rules of procedure governing its deliberations. In the absence of any other such rules, the Commission shall conduct its proceedings in accordance with Robert's Rules of Order, latest revised edition.



3. Agricultural conservation Easement +Farmland Protection Program Expenditures

The Board is authorized to acquire conservation interests in real property or to make payments to nonprofit conservation organizations for the purpose of rural and farmland preservation as provided herein.

- A. Conservation Easement Purchases.** The Board may, subject to subsection D, expend funds for costs associated with the purchase or acceptance of donated holders' interests or third party rights of enforcement in conservation easements as defined, respectively, in the Illinois Property Conservation Rights Act.
- B. Lend Purchases.** The Board may, subject to subsection D, expend funds for the purchase of land for the purpose of farmland protection.
- C. Payments to Nonprofit Organizations.** The Board may, subject to subsection D, appropriate money for payment to a nonprofit conservation organization for the conservation of farmland and natural resources within the County or beneficial to the County through the acquisition of conservation interests provided that the recipient organization submits and the Board approves a detailed plan for the work to be done. The Board may attach such conditions and restrictions on the appropriation as the Board considers necessary and appropriate to protect the County's Interests In farmland protection.
- D. Voluntary Conveyances.** The Board may acquire conservation interests only from willing owners and may not exercise its power of eminent domain to acquire such interests.
- E. Indirect Costs.** In addition to the purchase price therefor, the Board may expend funds for the payment of indirect costs associated with the conduct of the program, including costs of administration and acquisition of conservation interests, including but not limited to survey costs, title evidence, attorney's fees, appraiser's fees, environmental assessments, transfer taxes and recording fees.

4. Procedure for Acquisition of Conservation Interests

- A.** The Board may conduct public meetings or public hearings as it determines necessary or convenient for consideration of Agricultural Conservation Easement and Farmland Protection expenditures.
- B.** Prior to purchasing any conservation interest, the Board may cause an appraisal to be prepared by a

qualified appraiser setting forth the fair market value of the interest proposed to be purchased.

5. Alienation of Acquired Interests

Except where the intention to reconvey a conservation Interest is expressly provided for in the Board's authorization to acquire such interest no conservation interest acquired by the County under the provisions of this Ordinance shall thereafter be alienated, unless all of the following conditions have been met:

- A.** The Board or the Commission has conducted a public hearing for the purpose of considering the proposed alienation.
- B.** The County Board has referred to the Commission , for its consideration and recommendation before final action is taken by the Board, the proposed alienation. Unless such recommendation is made within 30 days, or such longer period as may be stipulated by the Board, the Board may take final action without it.
- C.** A resolution In support of the proposed alienation is adopted by an affirmative vote of two-thirds of the members of the Board.
- D.** A resolution In support of the proposed alienation is adopted by a majority of the members of the governing body of any public agency or nonprofit conservation organization which jointly undertook the acquisition of the conservation interest proposed to be alienated.

6. Conflict of Interest

No person may participate in any deliberation of the commission or of the Board in the consideration or determination of any expenditure under this Ordinance in which the person, a member of the person's family, or an organization with whom the person is affiliated has a financial interest.

7. Amendment or Repeal

This Ordinance may be amended or repealed only by affirmative vote of the Board following a public herein.

8. Severability

Should any provision of this Ordinance be adjudged invalid by a court of competent jurisdiction, such adjudication shall not affect the validity of any other provision of this Ordinance.

APPENDIX B: WORKING SCOPE- PROXIMATE EFFECTS

Kane County Farmland Preservation Ordinance Amendment

Amendment Focus: Common Questions | Geographic Scope: Kane County

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
How much food is currently donated to food banks by KC growers?	Will the amendment increase the amount of food donated to the food bank by KC growers?	Pounds of food donated, amount of money donated	Northern Illinois Food Bank, KC Farm Bureau	Discussion w/Northern IL Food Bank, other food pantries, KC Farm Bureau
How many acres are considered farmed in the Sustainable Urban and Critical Growth Areas?	Will the amendment change the # of acres farmed in the Sustainable Urban and Critical Growth areas?	Acres of farmed land	KC Development and Community Services Dept.	2040 Land Use map
What is the current amount/rate of income generated from agricultural uses in Kane County and the Chicago Metro region?	Will the amendment change the income generated from agricultural uses in KC? The Chicago Metro area?	Income from agricultural uses	USDA Census of Agriculture, KC Farm Bureau	Website review
How many food hubs/processing plants are in KC, Chicago Metro region, IL?	Will the amendment change the number of food hubs/processing plants in KC? The Chicago Metro area?	Number of food processing plants/hubs	Illinois Department of Agriculture	Website review
What are the current training opportunities for people wanting to startup a farm growing FFV, meats, dairy?	Will the amendment increase training opportunities for people who want to start farming?	Number of farmer training programs	Community Colleges, university extension offices	Discussion with colleges, extension offices
What percentage of the cost of FFV, meats, dairy is from transportation cost?	How would the amendment change the cost of FFV, meats, dairy?	Cost of transporting food vs. locally grown	Supermarket chains? Literature review?	Discussion with chains, literature review

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
What is the existing land use on unincorporated parcels > 5 acres? What is the existing land use on incorporated parcels > 5 acres?	How would the amendment change the land use on incorporated and unincorporated parcels > 5 acres?	Number of parcels > 5 acres by incorporated/unincorporated	KC Development and Community Services Dept., municipalities	Request for data
How many KC schools currently serve locally grown food in their cafeterias?	Will the amendment increase the number of KC schools that serve locally grown food in their cafeterias?	Number of schools	KC Fit for Kids	
How many KC institutional/food service/banquet facilities purchase locally grown FFV, meats, dairy?	How will the amendment change the number of institutional/food service/banquet facilities that purchase locally grown FFV, meats, dairy?	Number of facilities	Survey? KC Fit for Kids? KCHD?	Survey
What is the demand for local food from institutional/food service/banquet facilities?	How will the amendment change the demand for local food by institutional/food service, banquet facilities?	Demand for local food	Survey?, literature review	Survey, literature review
Health Outcomes				
What is the current social/emotional status of Kane County residents, Illinois, U.S.?	Will the amendment improve social/emotional status of residents?	Questions: Mental Health not good 14 or more days in past month; Usually or always get emotional support; General health	2011 Kane County Community Health Survey, BRFSS	Existing community health profile report
What are the current mortality rates by illness for KC, Illinois, U.S.? What are the current rates of chronic disease in KC?	Will the amendment lower rates of chronic disease?	Cause of death (chronic vs. other disease)	IDPH, CDC	Existing community health profile report
What are the current rates of obesity in Kane County, Illinois, and the U.S.?	Will the amendment decrease adult obesity rates in KC? Child obesity rates?	BMI for adults and children	2011 Kane County Community Health Survey, BRFSS	Existing community health profile report

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
What are current rates of physical activity for adults and children in KC, IL, US?	Will the amendment increase physical activity in KC adults? KC children?	Moderate or vigorous activity, days per week and hours per day	2011 Kane County Community Health Survey, BRFSS	Existing community health profile report
What is the current rate of diabetes hospitalizations in KC, IL, U.S.?	Will the amendment decrease rates of diabetes hospitalizations in KC?	Controlled diabetes	IDPH, CDC	Existing community health profile report
How many adults in KC, IL, U.S. have been told they have high blood pressure? How many have uncontrolled hypertension?	Will the amendment decrease rates of hypertension in KC? Rates of uncontrolled hypertension?	Number of people with high blood pressure. Hospital visits for hypertension	2011 Kane County Community Health Survey, IDPH, CDC	Existing community health profile report
How many servings of fruits/vegetables do KC adults and children have daily? IL and U.S.?	Will the amendment change how many servings of fruits/vegetables KC adults have daily? KC children?	Number of servings of FFV	2011 Kane County Community Health Survey, IDPH, BRFSS	Existing community health profile report
Does access to FFV increase consumption?	Will the amendment increase consumption of FFV?	Consumption of FFV	Literature review	Literature review
What is the current affordability of food? FFV, meats, dairy, and processed	Will the amendment make FFV, meats, dairy more affordable?	Cost of food by type	Market Basket Survey (for Aurora); survey	Existing survey results, new survey
What retail outlets are there for local FFV?	How will the amendment impact retail availability of FFV?	# of Farmer's Markets, Farm stands, CSAs, Food Coops, grocery stores selling local produce; usage of Farmer's Markets (attendance)	County Business Patterns*; Bounty of Kane; managers of Farmer's Markets	Website review, discuss with farmers market managers
What is current life expectancy for KC residents, IL, US?	Will the amendment improve life expectancy for KC residents?	Life expectancy		Existing community health profile report
Vulnerable populations				
What are current social/emotional status rates for areas of low income in KC?	Will prioritizing farms of all sizes in all areas improve mental health of residents in low-income areas?	Questions: Mental Health not good 14 or more days in past month; Usually or always get emotional support; General health by income	2011 Kane County Community Health Survey, BRFSS	Existing community health profile report

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
How many children enrolled in schools are eligible for free/reduced lunches? How many people in KC are lower than 200% of poverty level?	How will the amendment change food security?	Poverty level, enrollees in free/reduced lunch	ISBE, census	Website review, existing community health profile report
How many Hispanic and African American residents in KC are disproportionately affected by health disparities?	How would this amendment change the number of Hispanic and AA residents who are disproportionately affected by health disparities?	Health disparities by Hace/ethnicity	2011 Kane County Community Health Survey, BRFSS, IDPH	Existing community health profile report
Where are most of low-income residents located in KC? Urban vs. rural? Specific municipalities?	Will the amendment increase access to FFV for residents of low-income areas?	Low income by planning area, municipalities, corridors	U.S. Census	Existing community health profile report
What is the current number/% of residents in rural/agricultural areas who have health disparities?	Will the amendment decrease health disparities for residents in rural/ag areas as compared to urban/critical growth areas?	Health disparities by corridors	2011 Kane County Community Health Survey, IDPH	Existing community health profile report, data analysis
What is the air quality in KC and municipalities?	Will the amendment change air quality in KC and/or municipalities?	Air pollution - particulate matter days, air pollution - ozone days, CMAQ	EPA, CDC, PHASE Project, County Health Rankings	Website review
How many residents currently are eligible for SNAP? How many use it?	Will the amendment have an effect on the number of SNAP users in KC?	# of residents qualified to use SNAP, # of residents using it	IL Link website	Existing community health profile report, website review
How many live births were reported as low birth weight by race/ethnicity?	Will the amendment lower the number of low birth weight births in KC (by race/ethnicity)?	# of live births < 2,500 grams by race/ethnicity	IDPH	Existing community health profile
How many food deserts are in Kane County? Where are they located, by ZIP?	Will the amendment change the number of food deserts in KC?	Number of food deserts by ZIP	USDA	Website review
How many people live in food deserts in Kane County?	Will the amendment change the number of people living in food deserts?	Population living in food desert	Census, USDA	Website review

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
How many people consume 5 servings FFV a day by race/ethnicity?	Will the amendment increase the amount of FFV consumed daily by certain race/ethnicities?	FFV consumption by race/ethnicity	2011 Kane County Community Survey, BRFSS	Existing community health profile
What is the current rate of infant mortality by race/ethnicity in KC?	Will the amendment improve infant mortality rates by certain race/ethnicities?	Infant mortality rate by race/ethnicity	IDPH	Existing community health profile
What percentage of pregnant women in KC is getting proper nutrition?	Will the amendment improve nutrition for pregnant women?	Measure of proper nutrition in WIC data	WIC data	Data analysis
Does access to FFV increase attention span and/or improve behavior in school children?	Will the amendment improve attention spans and behavior for children in school?	Attention span/behavior in children	Literature review	Literature review



Kane County Farmland Preservation Ordinance Amendment

Amendment Focus: All Sizes/Areas | Geographic Scope: Kane County

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
Proximate Effects				
Which Sustainable Urban Corridor municipalities allow agriculture as a land use? Which Critical Growth Area municipalities allow agriculture as a land use?	Would prioritizing farms in the Sustainable Urban Area and Critical Growth Area increase the number of farms in these areas? Would the amendment change the number of municipalities that permit ag zoning?	Current land use policy	Review of municipal ordinances/codes	View websites, discuss with municipal planning staff
How many parcels are zoned agriculture in the Sustainable Urban area and Critical Growth area and are < 5 acres and > .5 acre?	How would prioritizing smaller parcels in all areas change zoning?	Number of parcels within limits selected	KC Development and Community Services Dept.	Request to Zoning division
What is the definition of small farm according to various sources?	Would prioritizing farms in the Sustainable Urban Area and Critical Growth Area increase the number of small farms in these areas?	Definition of small farm	County Business Patterns, Ag Census survey, review of county/municipal websites with farmland protection programs	Literature review, website review
What is the average property value of residences close to potential/existing agricultural parcels in SUA and CGA?	Would increasing farms in the SUA and CGA change property values?	Property values in designated areas	KC Assessor, real estate websites, IA report, AFT	Website review

Kane County Farmland Preservation Ordinance Amendment

Amendment Focus: Term Agreements | Geographic Scope: Kane County

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
What is the breakdown of crops grown by current farmland preservation participants?	How would the use of term agreements vs. perpetual agreements change the diversity of crops?	Commodity vs. specialty crops	KC Development and Community Services Dept, review of other farmland protection programs	Review of existing data, website search
Has the use of term agreements changed participation in other programs?	How would the use of term agreements change participation in the program?	Term agreement participation in protection programs	Reports from other farmland protection programs that use term agreements	Website review of other protection programs
How many farms/ acres are eligible for the program under current ordinance?	How would the use of term agreements change the number of farms/acres eligible for participation in the program?	Number of potential farms/acres	KC Development and Community Services Dept.	Review of existing data
What is the average time for a start-up farm to succeed (define succeed)?	How would the use of term agreements change the length of time for a start-up farm to succeed?		AFT	
What is the average length of time a farm stays in FFV, meat, dairy production?	How would the use of term agreements change the length of time a farm stays in FFV, meat, dairy production?		AFT	

Kane County Farmland Preservation Ordinance Amendment

Amendment Focus: Prioritize FFV | Geographic Scope: Kane County

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
What is the breakdown of crops grown by current farmland preservation participants?	How would prioritizing farms growing FFV change the diversity of crops? What percent of farms would change production?	Types of crops grown	KC Development and Community Services Dept.	From Farmland Protection Ordinance participants
How much pride do people have in locally grown food? What is the support for local food?	How will prioritizing farms growing FFV, meats, dairy, impact pride in and support for locally grown food?	Pride in local food/ culture	Survey, literature review	AFT, 2025 Plan
How many Farmers Markets are in KC?	How would prioritizing FFV change the number of Farmers Markets	Number of markets	KC Fit for Kids, KC Farm Bureau	KC Farm Bureau website
What is the use of Link at Farmers Markets in KC that accept it?	How would prioritizing FFV change the use of Link at KC Farmers Markets	Number of Link transactions/farmers market	KC Fit for Kids	Data from mini-grant program
How many KC farms currently produce FFV, dairy, meats?	Would prioritizing farms that grow FFV, dairy, meats for local consumption increase the number of farms that meet the criteria?	Number of farms providing FFV, meats, dairy	County Business Patterns*; Food Ag Census**; Farm Bureau; Bounty of Kane	Websites, datasets
How much FFV, meats, dairy is currently produced in KC?	Will prioritizing FFV, meats, dairy, change how much food will be grown within county limits?	Pounds of locally grown FFV? Acres in production for FFV?	County Business Patterns*; Food Ag Census**; Farm Bureau; Bounty of Kane	Websites, datasets

* County Business Patterns has number of retail establishments, # of FTEs, what kinds of food establishments there are)

** Food Ag Census has number of farms, acreage, type of food produced

Existing Conditions Research Questions	Impact Research Questions	Indicators	Data Sources	Methods
How many people are currently employed on farms producing FFV, meats, dairy?	Will prioritizing farms that grow FFV increase number of jobs on farms?	# of job opportunities	IL Dept. of Labor, Woodbury County IA as a model	Website review, report review, Census of Agriculture?
What types of crops could be grown on small parcels?	Is it possible to grow fresh fruits and vegetables, meats, and dairy on small parcels and be profitable?	Potential crops grown here	U of I Extension, current farmers growing FFV	Discussion with extension staff, current farmers
What nutrient-rich food can be grown in KC?	How will prioritizing FFV change what nutrient-rich food is grown in KC?	List of nutrient-rich foods that can be grown in KC climate, soil	U of I Extension	Discussion with extension staff
What types of crops do residents want to purchase from local growers?	How will prioritizing FFV, meats, dairy change what products residents want to purchase from local growers?	Types of crops desired	Survey, farmers market data	Survey of farmers market attendees, grocery store data, CSA data
What retail outlets are there for local FFV?	How will prioritizing FFV, meats, dairy impact retail availability of FFV, meats, dairy?	# of Farmer's Markets, Farm stands, CSAs, Food Coops, grocery stores selling local produce; usage of Farmer's Markets (attendance)	County Business Patterns*; Bounty of Kane; managers of Farmer's Markets	Website review, survey of farmers market managers
How many restaurants are in KC and how many currently serve food from local farms? What % of menu is locally grown?	Will prioritizing farms that grow FFV increase the number of restaurants serving locally grown food?	Number of restaurants serving local food. % of total food served locally grown	KCHD, survey	KCHD environmental health data, survey of restaurants
What is the demand for local food from KC restaurants?	Will prioritizing farms that grow FFV help meet demand for local food?	Demand for local food	Survey, AFT resources, Slow Food	Survey of restaurants
How many people visit farmers markets in KC?	Will prioritizing farms that grow FFV change the number of people visiting farmers markets?	Number of visitors to farmers markets	Farmers markets, Fit for Kids, Literature review	Survey of farmers market managers, count of attendees by through site visit, lit review
How many vendors sell at farmers markets in KC?	How will prioritizing FFV change the number of vendors selling at farmers markets?	Number of vendors at farmers markets	Farmers markets, Fit for Kids	Survey of farmers market managers

HIA Scoping 3-question survey



Kane County Health Impact Assessment Prioritization Survey



The Kane County Development and Community Services Department and Kane County Health Department are jointly conducting a Health Impact Assessment (HIA) regarding a proposed amendment to the county's Farmland Protection Ordinance to increase local food production. As part of the assessment, we are looking for your input on narrowing the focus of our research on local food production and how it may change the health of Kane County residents.

For more information, you can visit our HIA web page at

<http://www.kanehealth.com/hia.htm>

or the Farmland Protection Ordinance website: <http://www.countyofkane.org/Documents/Quality%20of%20Kane/commLivability/FarmlandPreservationLocalFoods.pdf>.

Thank you for taking time to complete our survey!

*** 1. If there is an increase in local food production in Kane County, which of the following outcomes are most important to you? Please select 3.**

- ☐ Retain local dollars
- ☐ Reduce carbon emissions
- ☐ Create jobs
- ☐ Improve public health (for example, change in obesity, chronic disease, etc)
- ☐ Improve quality of life in Kane County
- ☐ Reduce energy consumption
- ☐ Better connect rural and urban populations in county/region
- ☐ Build stronger communities and civil society
- ☐ Conserve land and water resources
- ☐ Stimulate local businesses
- ☐ Make local food more accessible to lower-income residents
- ☐ Make local food more accessible to all KC residents
- ☐ Other (please describe)

HIA Scoping 3-question survey

***2. What do you think are the key barriers to expanding the local food system in Kane County? Please choose 3.**

- ☐ Facilities for value-added processing not adequate
- ☐ Financing not available for start-ups
- ☐ Local markets not strong enough
- ☐ Resources for skills / education / training lacking
- ☐ Social networks not strong enough
- ☐ Not enough research and development
- ☐ Land not sufficiently accessible to local growers
- ☐ Lack of ability to extend growing season
- ☐ Need for better stewardship of resources
- ☐ Inadequate soils for growing local food
- ☐ Food distribution/storage infrastructure not adequate
- ☐ Public not concerned enough about diet and health
- ☐ Consumers uneducated about the benefits of local food
- ☐ Public policies not supportive of local food
- ☐ Not enough businesses supporting local food
- ☐ Cost of energy too high
- ☐ Other (please describe)

***3. Are you a...**

- ☐ Food Producer
- ☐ Farmers Market Manager
- ☐ Participant in Kane County Farmland Protection Program
- ☐ Community Group
- ☐ Municipal Government or School District
- ☐ Kane County Farmland Protection Board Member
- ☐ Health Advisory Committee
- ☐ Other (please describe)

APPENDIX D: SURVEY METHODOLOGY + STAKEHOLDER INPUT

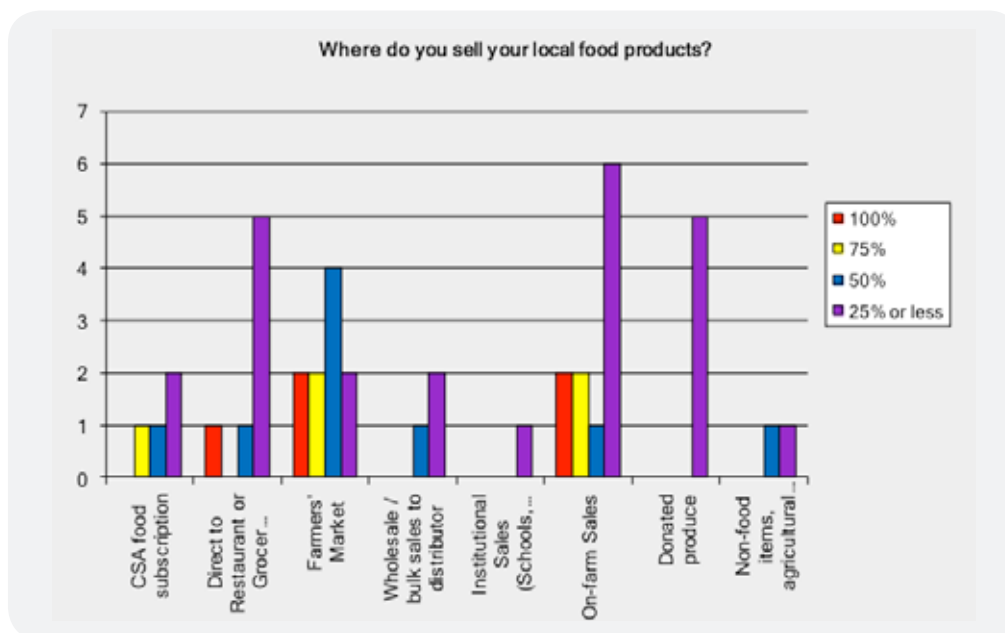
Surveys provided an opportunity to gather feedback from a wide variety of stakeholders throughout the assessment phase. Surveys were tailored to the groups. In August 2012, a web-based survey link was sent to local farmers/producers to gather information about their current operations and future plans. Out of the 46 producers who were sent the survey link, 15 completed the survey, for a response rate of 33%. Extending the end date increased participation. See Appendix E for Producer Survey Questions and Summary.

The next survey was conducted at the Kane County Farm Bureau Harvest Picnic, which was held in September 2012. All farm bureau members were invited, as well as local elected officials and approximately 175 people participated in the survey. The project team used interactive polling devices to query attendees on a variety of questions, including some from the scoping spreadsheet. This survey asked a few of the same questions as the producer survey and the results were. See Appendix F for Farm Bureau Harvest Leadership Picnic survey questions and responses.

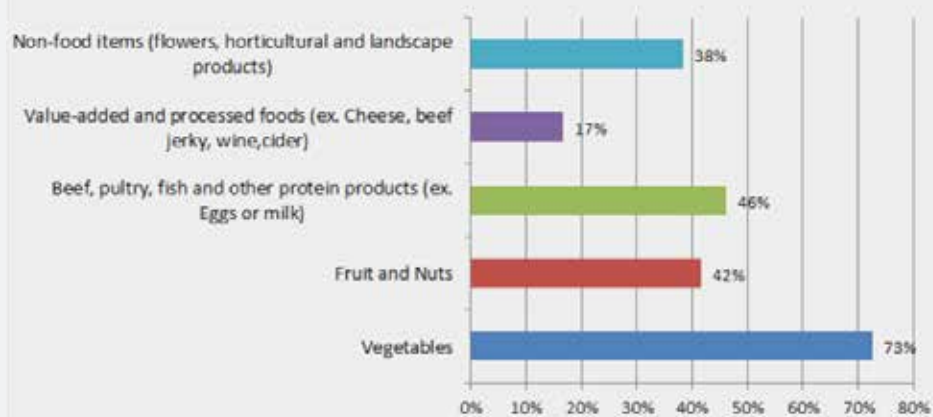
A survey of farmers markets in Kane County was completed in September 2012 by health department staff as part of another project. This was done in-person, by interviewing market managers and direct observation of goods sold. The survey tool was created by another organization, but the HIA project team added questions that would provide answers for the selected research questions.

The final survey was conducted at the annual Kane County Planners' Forum, which was held in December 2012. The forum included planners from all municipalities in Kane County, as well as developers and private planning organizations. There was a formal presentation which covered the history of farmland protection in the county and an analysis of the economic benefits of local food production. The survey was conducted with interactive audience polling devices and the questions captured details from zoning and land use policies at the municipal level as well as other information relating to the HIA research questions. See Appendix G for the Kane County Planner's Forum Survey.

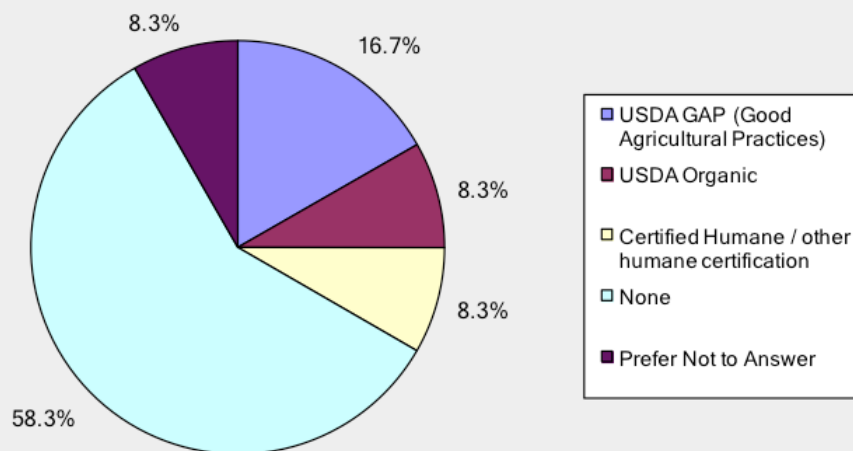
APPENDIX E: PRODUCER SURVEY QUESTIONS + SUMMARY



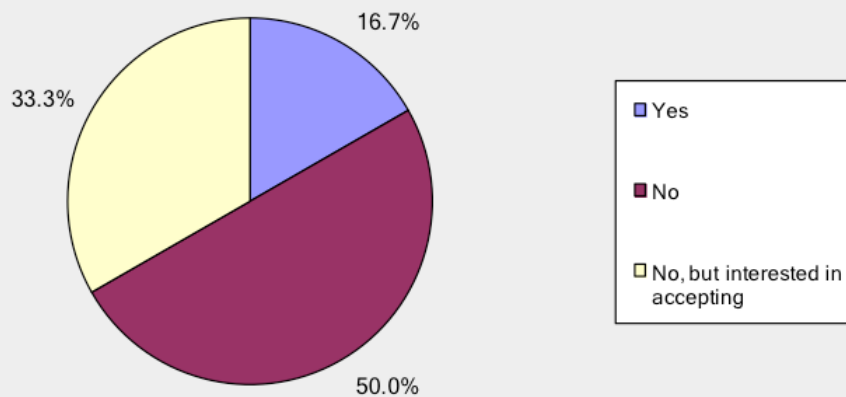
Which of the following types of food and other items you produce are sold locally in Kane County? Please think about your production for the past two years.

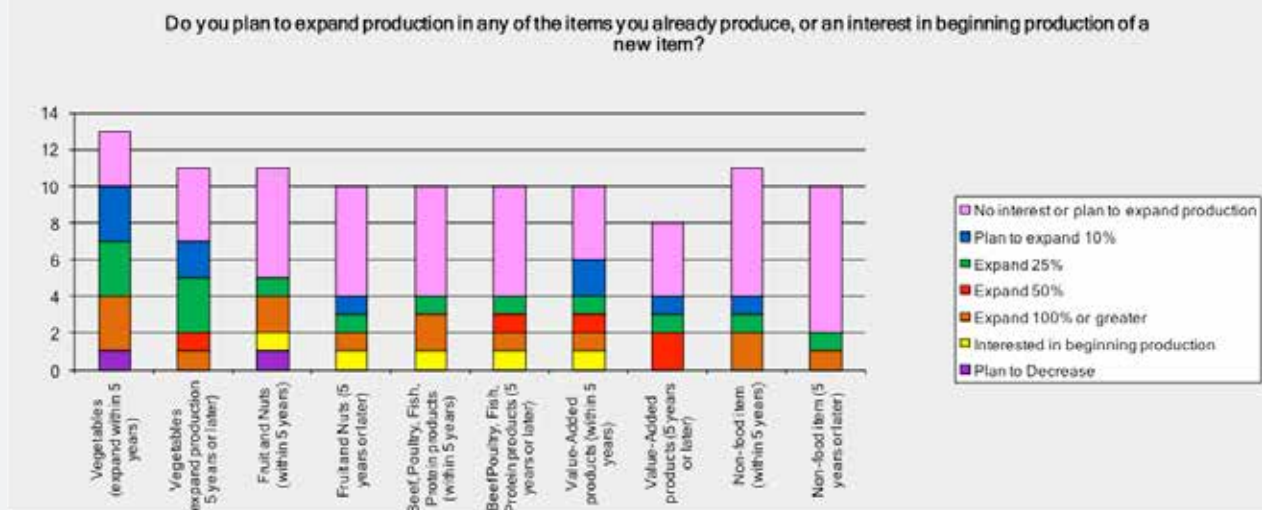
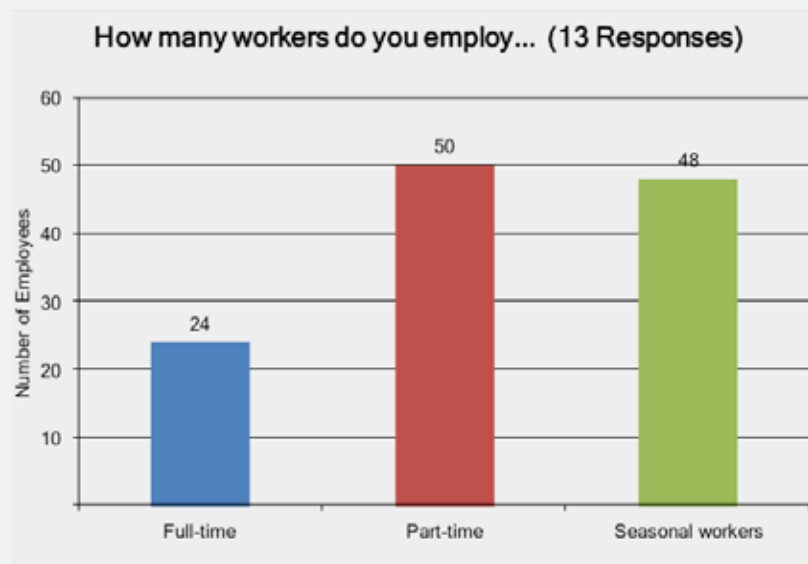
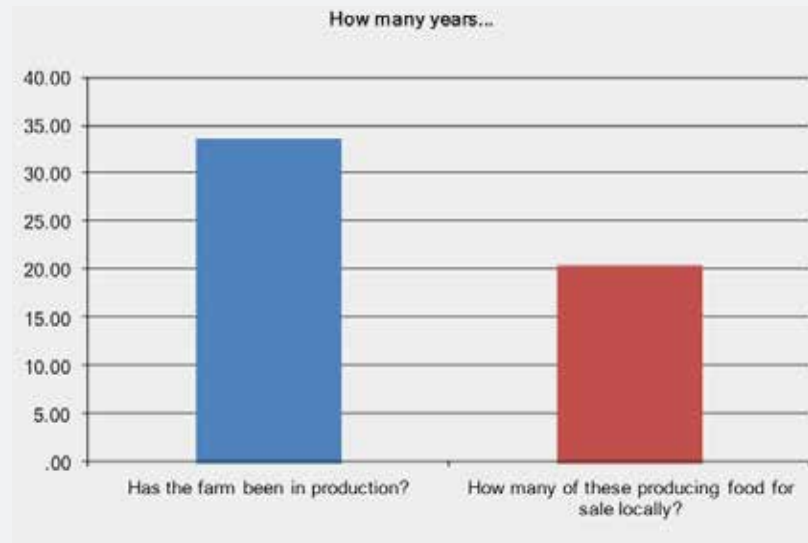


What types of business and product certifications does your farm operation have?

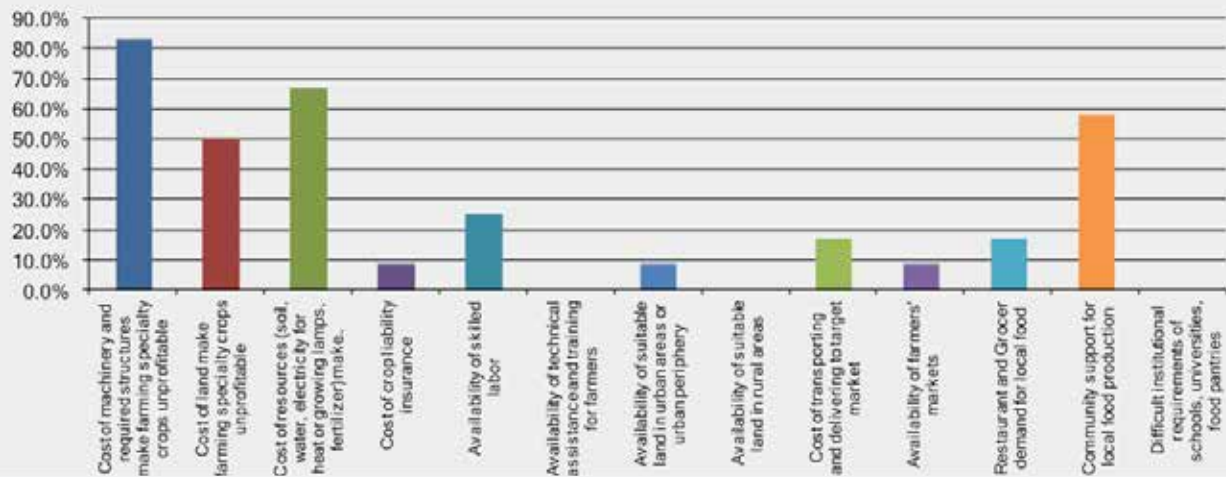


Do you currently accept Illinois Link card as a method of payment?

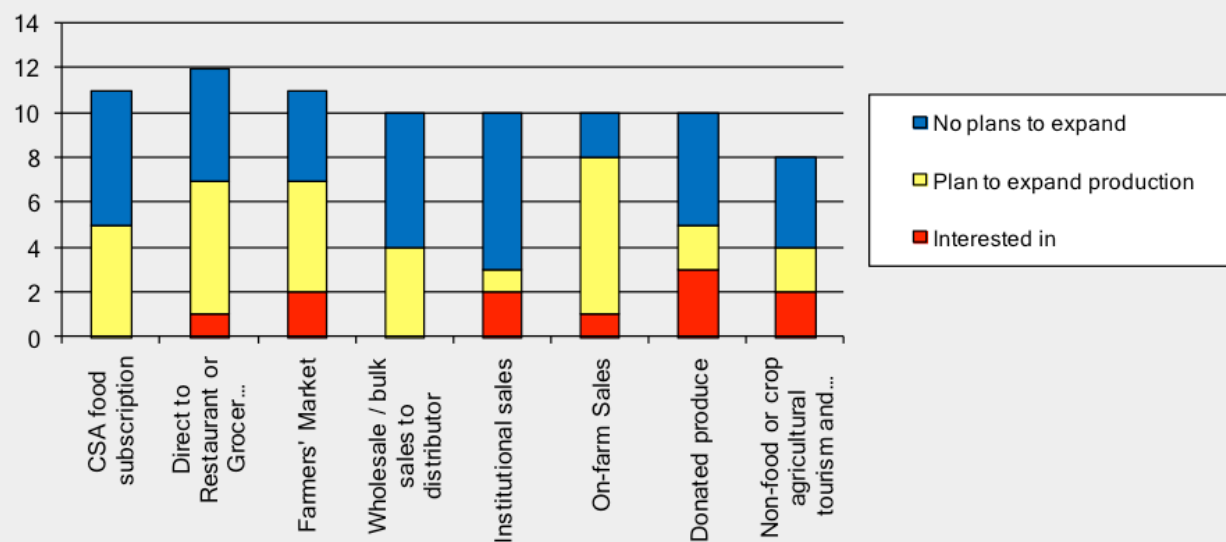




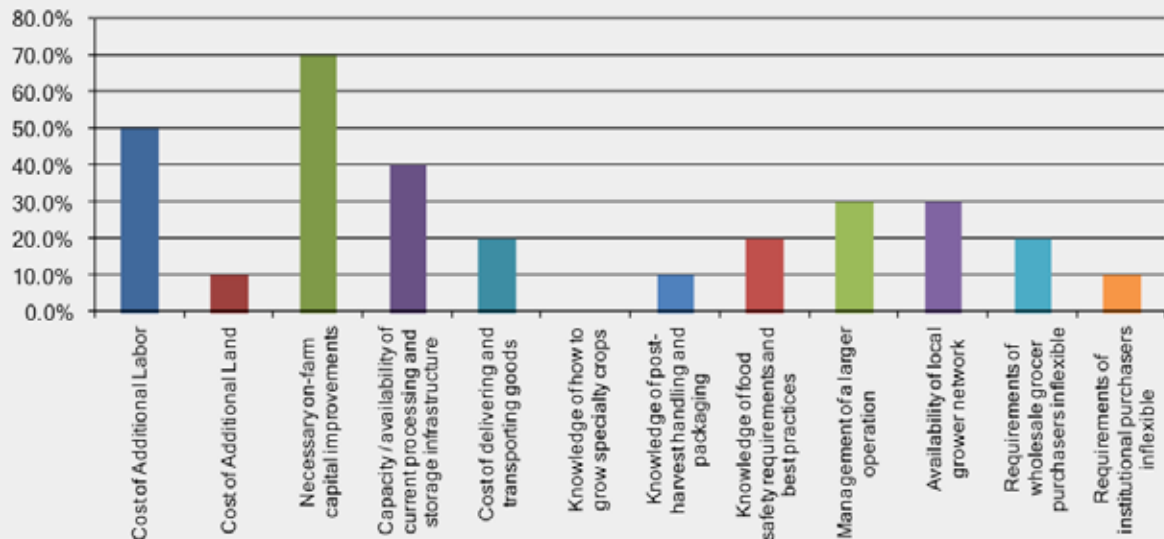
Which of the following do you consider to be significant barriers to local food production? (Choose 4)



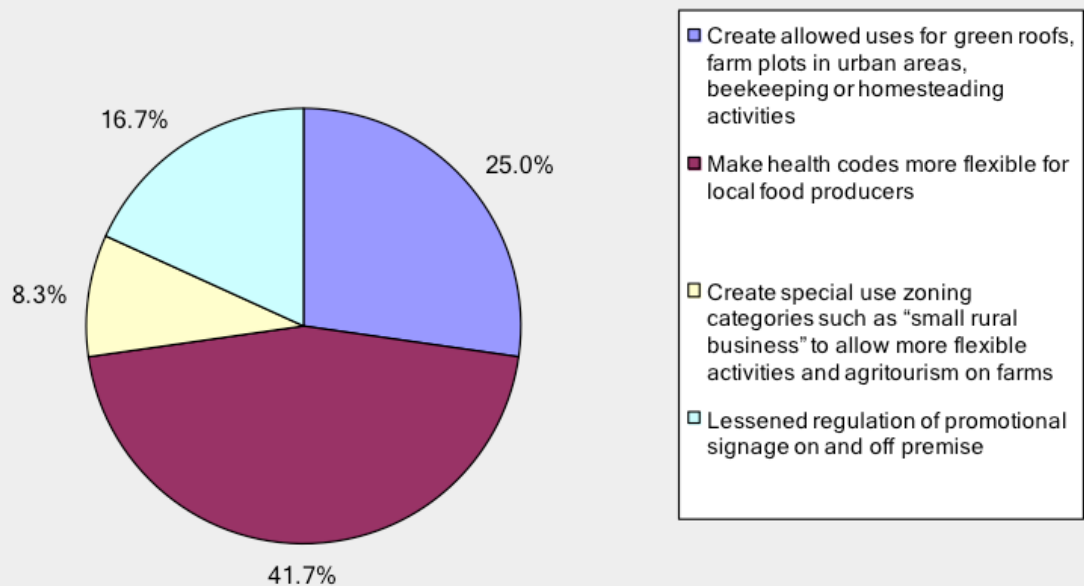
Do you have plans to expand your farm operation into any of the following markets?



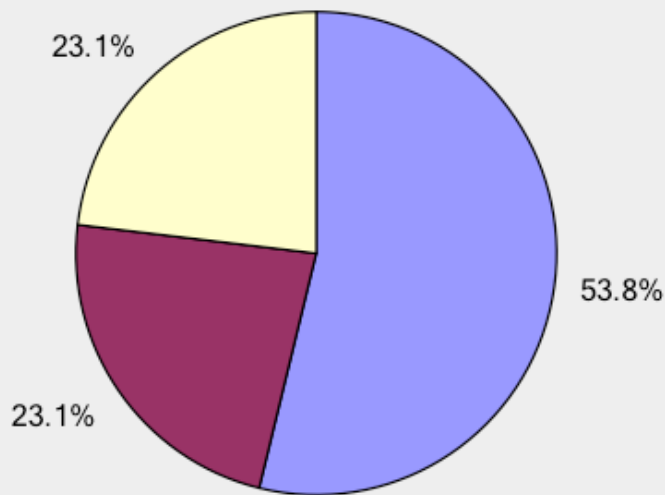
Which of the following are significant barriers to expanding local food growing for wholesale demand levels? (choose 4) After making your choice, please rank your top four in the following question by selecting the corresponding letter.



Which of the following changes to existing regulations, ordinances, or codes would be most effective in enabling local food production?

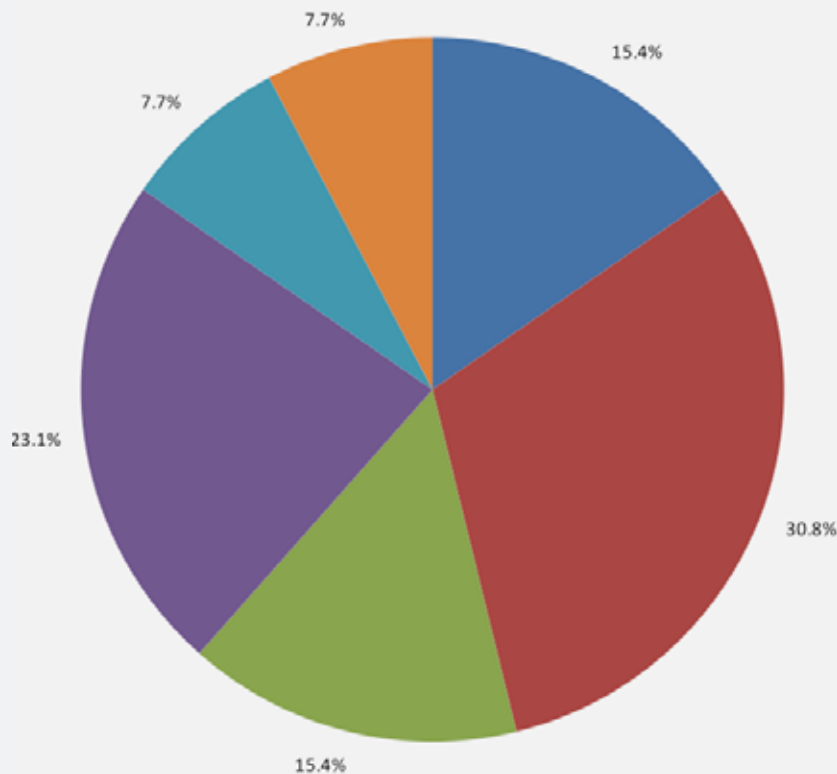


Which of the following changes to current government programs and institutions would make local food production more feasible?



- Make the farmland preservation program more flexible for purchasing smaller lots or allowing seasonal crop production
- Promote local food through procurement goals of institutions such as schools and hunger-relief programs
- Promote local food through integration with county health, economic development, parks or other government programs

If one of the following incentives were created, which would be most effective in promoting local food production?

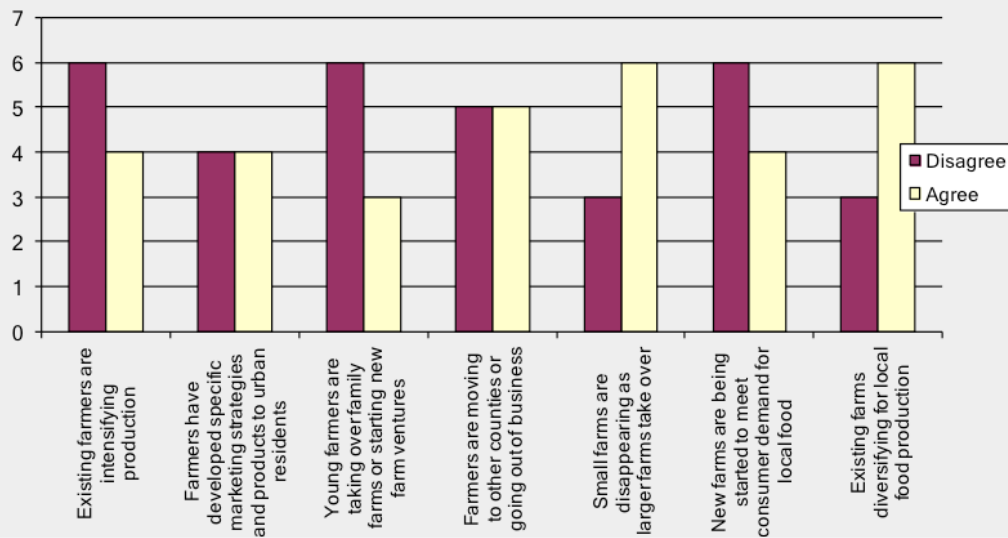


- Promote local food processing and distribution through creating facilities for incubator space such as recipe kitchens
- Incentivize urban agriculture through tax credits such as discounted property taxes in urban areas
- Incentivize convenience and corner grocery stores to carry fresh produce by assisting with tax credits or refrigeration equipment purchases, particularly in areas with underserved populations
- Policy allowing rental/contract of publicly owned lands for local food production
- Promote healthy eating habits and knowledge of where food comes from through consumer education initiatives
- Facilitate grower networks and support a forum for discussion, such as a local food group of various stakeholders through public discussions, education, and events

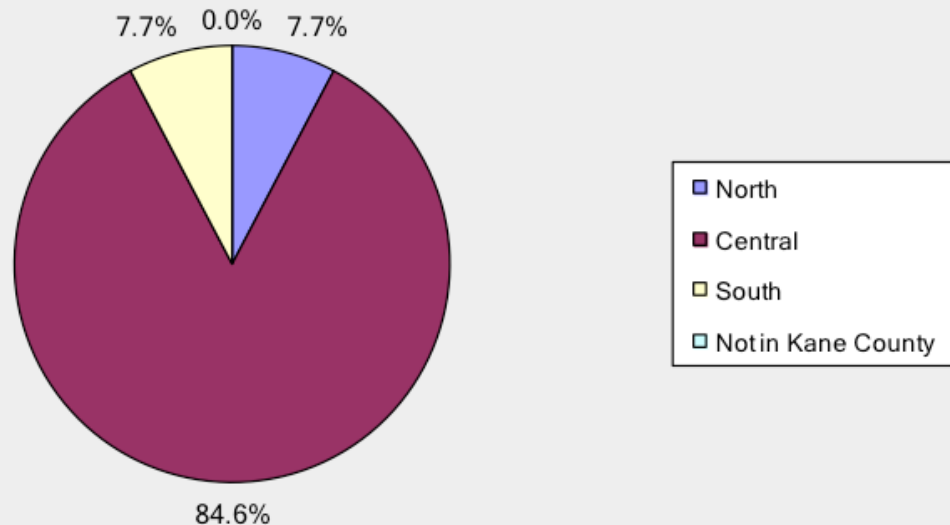
If a policy option for increasing local food production was not listed above, please describe here:

- Discount advertising or promotion in local news sources
- I do not think it is a question of adding new policies, the demand is there.
The challenges are to make the business of local food production sustainable.
- We do not need more farmer's markets. If anything we need less!

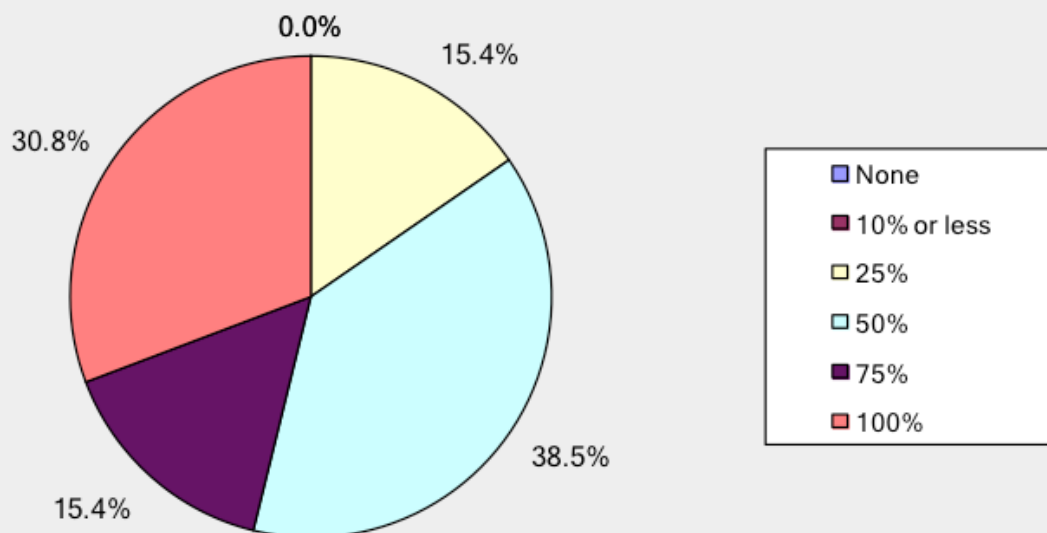
What is your perception of local food production in Kane County or nearby areas?



Which of the following planning areas are you located in? (See reference map above)



How much of your local food sales occur within Kane County?



Please describe any other trends or comments on food production in Kane County:

- Declining retail sales is slowing our growth. We are working off farm to survive and finance our growth. We are exploring other ways to sell our product; CSA, buying clubs, co-ops that are starting up, etc. We will expand into fruit growing. Quality fruit is easier to sell than vegetables. We are exploring which products are popular sellers and expanding in that direction. (Retail: tomatoes, carrots and fruit. Wholesale: greens, tomatoes, carrots, herbs)
- There are more places to get local produce now than 5 years ago, but there is much more room to increase the number of local stands, etc. because I still believe the local population is underserved in terms of local produce.

- I believe the economy has created some opportunities for those out of work to try their hand at either growing produce or buying from a local grower and selling on their own.
- Our business has learned a tremendous amount during the last five years. This economy has been a struggle for all small businesses. Our business has had to be innovative to survive. What we have found is that our customers are loyal because they have opportunities to connect with where food comes from, learn about the wellness that comes from local and organic vegetables, and they can connect with a community built around our farm.

APPENDIX F: FARM BUREAU HARVEST LEADERSHIP PICNIC SURVEY

SEPTEMBER 26, 2012

1 Illinois is one of five top pumpkin producing states in the USA:

	Yes	No	TOTAL
Farmer	43	2	45
Farmland Owner	37	3	40
Elected Official	12	1	13
Federal/State Employee	12	0	12
County/Township/ Municipal Employee	18	0	18
Other	44	1	45

2 Illinois pumpkins are grown mostly for:

	Landscape Ornamentals	Food	TOTAL
Farmer	20	27	47
Farmland Owner	15	29	44
Elected Official	7	6	13
Federal/State Employee	5	9	14
County/Township/ Municipal Employee	8	9	17
Other	17	28	45

3 Which is NOT a variety of little pumpkins?

	Honey Boo Boo	Baby Boo	Jack Be Little	TOTAL
Farmer	34	5	4	43
Farmland Owner	30	4	7	41
Elected Official	9	0	3	12
Federal/State Employee	10	1	3	14
County/Township/Municipal Employee	15	0	2	17
Other	32	4	8	44

4 I am a _____. (select all that apply)

	Farmer	Farmland Owner	Elected Official	Federal/State Employee	County/Township/Municipal Employee	Other	TOTAL
Farmer	49	36	5	3	5	17	115
Farmland Owner	36	45	8	1	3	14	107
Elected Official	5	8	13	1	3	3	33
Federal/State Employee	3	1	1	14	3	3	25
County/Township/Municipal Employee	5	3	3	3	19	5	38
Other	17	14	3	3	5	45	87

5 Do you have children, grandchildren or other family members interested in joining your farm operation?

	Yes	No	TOTAL
Farmer	36	10	46
Farmland Owner	27	15	42
Elected Official	3	10	13
Federal/State Employee	5	7	12
County/Township/ Municipal Employee	5	8	13
Other	11	26	37
TOTALS	87	76	163

6 How many acres have been permanently protected through the Kane County Farmland Protection Program?

	< 1,000 acres	2,500 acres	5,000 acres	TOTAL
Farmer	1	14	30	45
Farmland Owner	2	11	29	42
Elected Official	0	2	9	11
Federal/State Employee	0	6	7	13
County/Township/ Municipal Employee	0	5	11	16
Other	0	10	29	39



7 For farmers and farmland owners only - What products does your farm produce? (select all that apply)

	Corn	Soybeans	Meat	Dairy	Fruit	Vegetables	Sheep/ Wool	Other Specialty Items
Farmer	40	36	15	5	4	14	3	25
Farmland Owner	39	35	10	4	4	10	3	18
Elected Official	6	6	0	1	0	0	0	3
Federal/State Employee	5	4	2	0	0	0	0	2
County/Township/ Municipal Employee	5	5	1	0	0	1	0	3
Other	16	14	4	4	4	7	2	9
TOTALS	111	100	32	14	12	32	8	60

8 Who spends more of their disposable income on food - China or the USA?

	China	USA	TOTAL
Farmer	34	11	45
Farmland Owner	31	13	44
Elected Official	6	5	11
Federal/State Employee	7	5	12
County/Township/ Municipal Employee	6	11	17
Other	21	22	43

9 Which of the following do you consider significant barriers to local food production? Select all that apply.

	Cost of Machinery/ Structures	Labor Availability	Cost of Land	Training + Technical Assistance	Lack of Community Support	Certification	Other Costs (Utilities, Irrigation)	TOTAL
Farmer	32	20	41	15	9	13	24	154
Farmland Owner	29	21	35	15	8	12	20	140
Elected Official	8	6	6	1	2	1	5	29
Federal/State Employee	8	3	8	1	6	2	7	35
County/Township/ Municipal Employee	12	5	12	5	8	5	9	56
Other	34	21	33	17	19	11	27	162
TOTALS	123	76	135	54	52	44	92	576

10 The most important thing Kane County can do to promote local food production is:

	Create Special Zoning + Incentives	Encourage Urban Agriculture	Relax Sign Regulations	None of the Above	TOTAL
Farmer	7	9	11	8	35
Farmland Owner	6	9	9	10	34
Elected Official	2	1	2	2	7
Federal/State Employee	1	7	1	1	10
County/ Township/ Municipal Employee	4	8	2	0	14
Other	7	16	3	6	32
TOTALS	27	50	28	27	132

11 The most helpful policy to promote local food production is:

	Less Restrictive Health Codes	Small Lot Farm Zoning	Incentive to Urban Groceries to Sell Local Food	None of the Above	TOTAL
Farmer	11	5	25	4	45
Farmland Owner	9	3	23	4	39
Elected Official	5	0	2	2	9
Federal/State Employee	1	4	6	1	12
County/ Township/ Municipal Employee	0	7	7	2	16
Other	4	7	28	2	41
TOTALS	30	26	91	15	162

12 Good ideas that Kane County should pursue are (pick top 2):

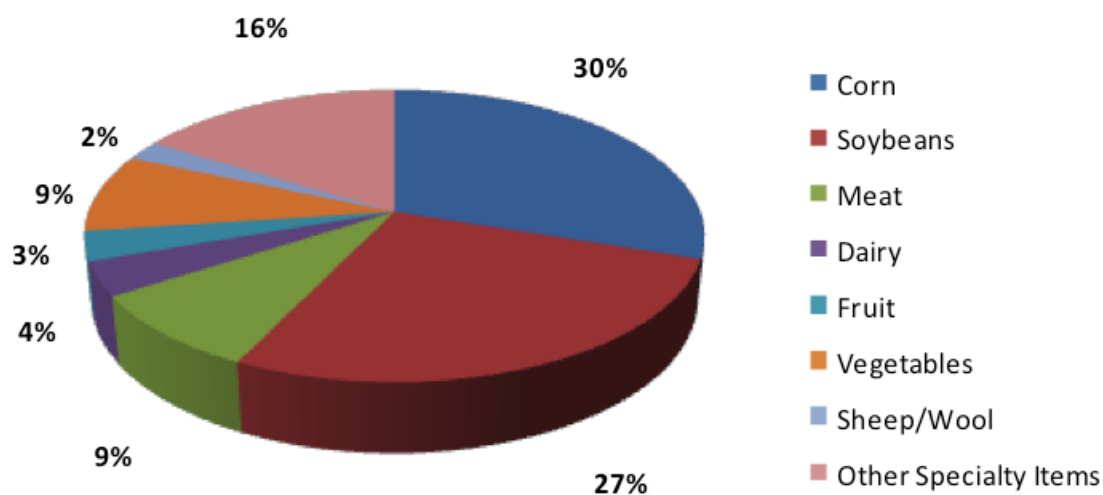
	Consumer Education on the Benefits of Locally Grown Food	Allow Rental of Public + Government Owned Land for Commercial Growing of Local Foods	Encourage More Farmers Markets	Encourage Procurement for Local Foods from Schools, Government + Other Institutions	Facilitate Grower Networks, Training	Tax Credits for Urban Agriculture	Improve Value Added Production with More Certified Kitchens	TOTAL
Farmer	10	23	9	17	6	12	3	80
Farmland Owner	10	20	12	11	5	12	3	73
Elected Official	2	4	1	1	1	5	2	16
Federal/State Employee	4	5	1	6	3	5	0	24
County/Township/Municipal Employee	5	7	4	7	2	8	1	34
Other	11	19	10	16	9	16	0	81
TOTALS	42	78	37	58	26	58	9	308

13 Farmland Protection can help meet both the demand for global food production and local production:

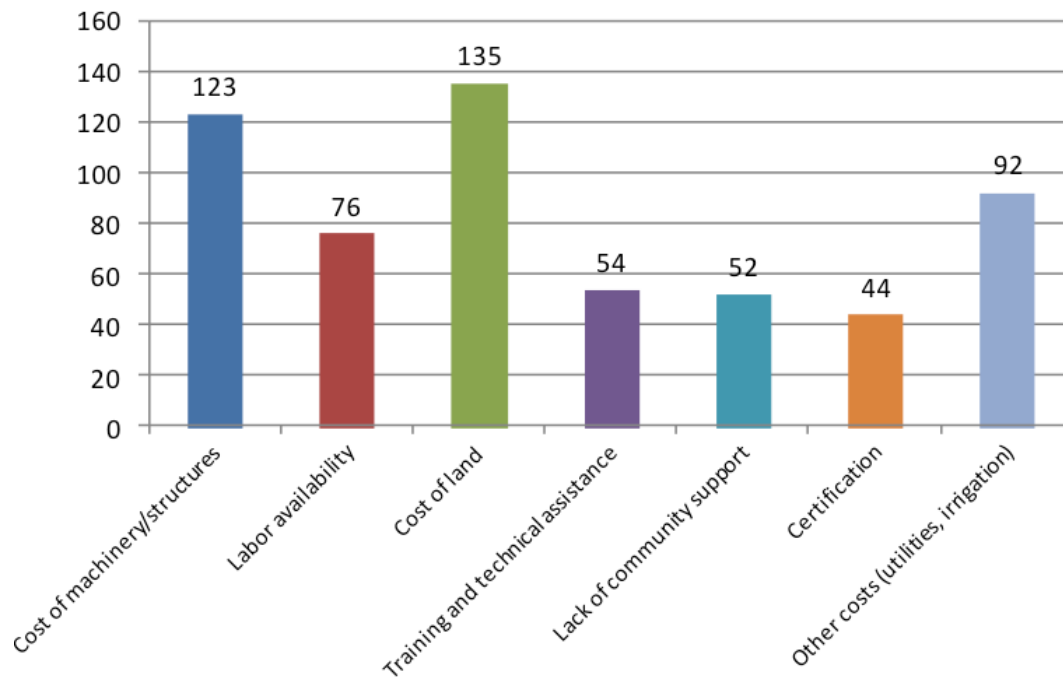
	Agree	Disagree	TOTAL
Farmer	35	10	45
Farmland Owner	29	13	42
Elected Official	8	3	11
Federal/State Employee	9	2	11
County/Township/ Municipal Employee	16	0	16
Other	38	6	44

SELECTED CHARTS

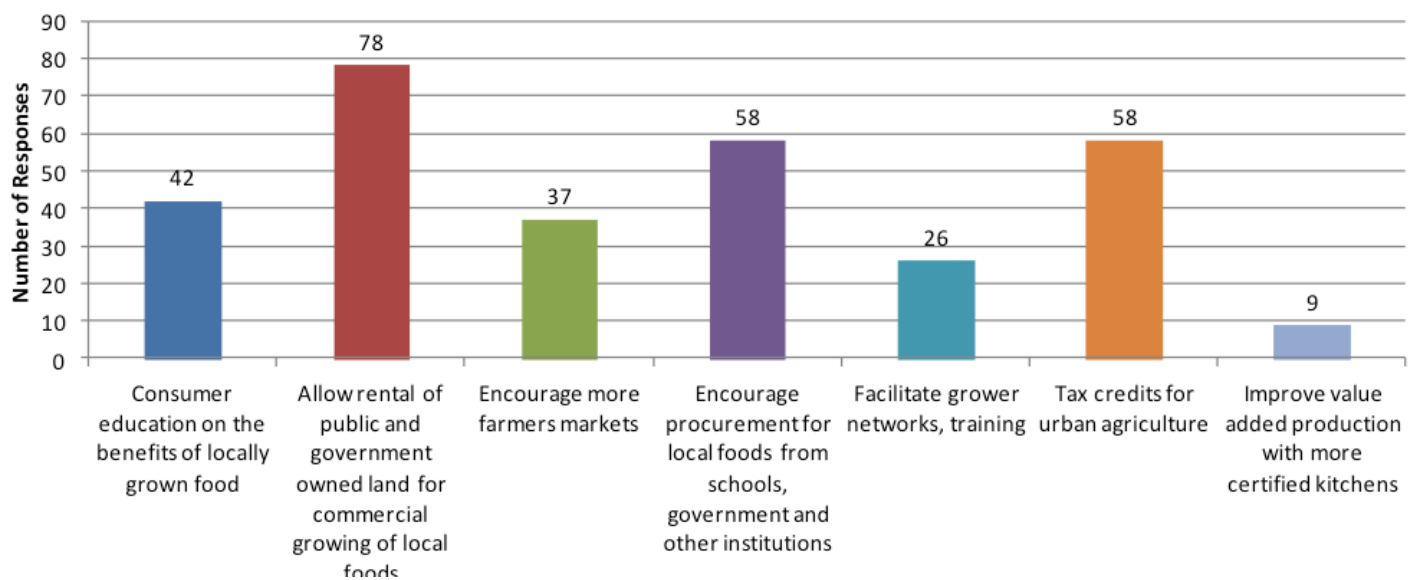
What Products Does Your Farm Produce (Select all That Apply)



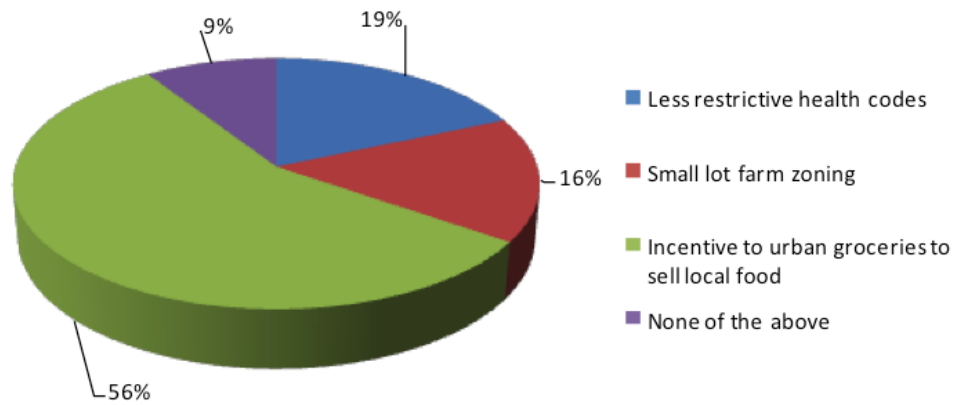
Barriers to Local Food Production



Good Ideas Kane County Should Pursue are...



The most helpful policy to promote local food production is



APPENDIX G: KANE COUNTY PLANNERS' FORUM SURVEY

1 Two Brothers Brewing Company "family of great beers" is available in _____. (Multiple Choice)

	Responses Percent	Count
Illinois	18%	12
Illinois and Minnesota	7%	5
Illinois and Ohio	3%	2
Illinois, Indiana, Ohio, New York, and Minnesota (c)	72%	48
TOTALS	100%	67

2 What percentage of U.S. hops is exported to breweries worldwide? (Multiple Choice)

	Responses Percent	Count
25%	11%	6
40%	26%	14
60% (c)	47%	25
75%	15%	8
TOTALS	100%	53

3 Most U.S. hops are grown in three states, where a tradition of family hops farms dates back to the 19th century. What state produced 79 percent of the United States hop crop in 2011, according to the USDA? (Multiple Choice)

	Responses Percent	Count
Idaho	12%	7
Oregon	32%	19
Washington (c)	32%	19
Illinois	24%	14
TOTALS	100%	59

4 There was a worldwide hops shortage a few years ago because _____. (Multiple Choice)?

	Responses Percent	Count
The Cubs failure to win a single playoff game for the second consecutive year, damaging team morale to such an extent that they have failed to make it back to the playoffs ever since.	17%	10
The White Sox won a one-game playoff against the Twins to secure the AL Central title.	3%	2
Severe weather conditions in Europe and a warehouse fire in Washington's Yakima Valley that destroyed a huge chunk of the globe's hops. (c)	66%	38
The Bears finally gave up on Rex Grossman, giving Bears' fans everywhere a reason to celebrate.	14%	8
TOTALS	100%	58

5 What role best describes you? (Demographic Assignment)

	Responses Percent	Count
Public Planner	50%	30
Private Planner	10%	6
Engineer	8%	5
Related Field	27%	16
Retiree	5%	3
TOTALS	100%	60

6 If you work for a Kane County community (public or private role) does this community offer agriculture as a land use in its plan? (Multiple Choice)

	Responses Percent	Count
Yes	48%	29
No	27%	16
Don't Know	12%	7
Don't Work in Kane County or its Communities	13%	8
TOTALS	100%	60

7 If you work for a Kane County community (public or private role) does this community offer agriculture as a zoning classification? (Multiple Choice)

	Responses Percent	Count
Yes	49%	29
No	29%	17
Don't Know	10%	6
Don't Work in Kane County or its Communities	12%	7
TOTALS	100%	59

8 What does local food mean to you? (Multiple Choice)

	Responses Percent	Count
McDonald's, Taco Bell or Portillo's	6%	4
Food grown in Kane County	29%	20
Food grown in the Great Lakes Region	26%	18
Food grown within 250 miles of your home	38%	26
TOTALS	100%	68

9 If you work for a Kane County community (public or private role) is this community considering working toward a program, policy, or financial incentives in any of the following areas: (select all that apply) (Multiple Choice - Multiple Response)

	Responses Percent	Count
Community Gardens	34%	25
Farmers Market	38%	28
Hydroponics	7%	5
Rooftop Garden	8%	6
Commercial Urban Agriculture	14%	10
TOTALS	100%	74

10 In Illinois \$ 46 billion (96%) of annual food expenditures leaves the state. How much money leaves Illinois spent on fruits and vegetables alone each year? (Multiple Choice)

	Responses Percent	Count
\$1,000,000	4%	3
\$14,000,000	24%	17
\$14,000,000,000 (c)	71%	50
TOTALS	100%	70

11 Which is not a top crop in Illinois? (Multiple Choice)

	Responses Percent	Count
Pumpkin	1%	1
Horseradish	34%	24
Asparagus	21%	15
Cauliflower	23%	16
Green Peas	8%	6
Lima Beans	7%	5
Sweet Corn (c)	6%	4
TOTALS	100%	71

12 Cleveland Market (median sized studied in 2012) attracts 50,387 visits each year. Projected gross income - \$ 1.8 million in combined receipts. 44% of market shoppers spend “sticky” dollars at nearby businesses, resulting in \$ 778,270 in gross receipts at those businesses. Results in total combined economic impact in the region of: (Multiple Choice)

	Responses Percent	Count
\$1,000,000 Annual	8%	5
\$2,000,000 Annual	18%	11
\$3,400,000 Annual (c)	74%	45
TOTALS	100%	61

13 Which County has the both the highest childhood poverty rate AND the highest overall poverty rate? (Multiple Choice)

	Responses Percent	Count
Kane (c)	64%	42
Kendall	9%	6
DeKalb	15%	10
McHenry	6%	4
DuPage	6%	4
TOTALS	100%	66

- 14 In a 2010 Illinois study – What percentage of Northern IL parents were satisfied with the nutritional quality of the food served in the meal program at their children’s school? (Multiple Choice)

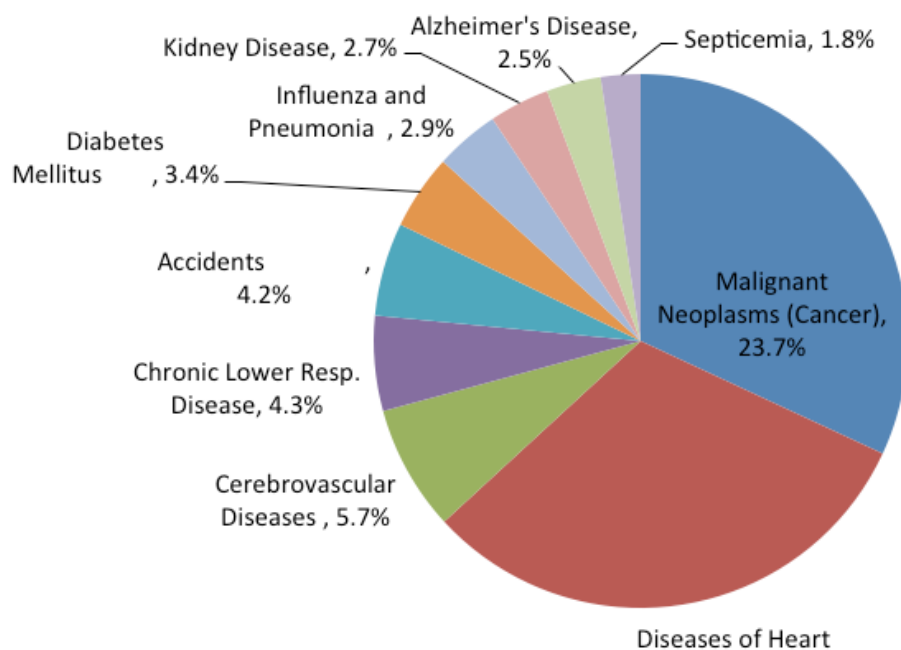
	Responses Percent	Count
17% (c)	66%	41
50%	27%	17
75%	6%	4
TOTALS	100%	62

- 15 The Fresh Fruit and Vegetable Program provides all students in selected elementary schools with high free and reduced price enrollment with a wide variety of healthy fresh fruits and vegetables. How much money do Illinois schools receive for fresh fruits and vegetables for this program alone? (Multiple Choice)

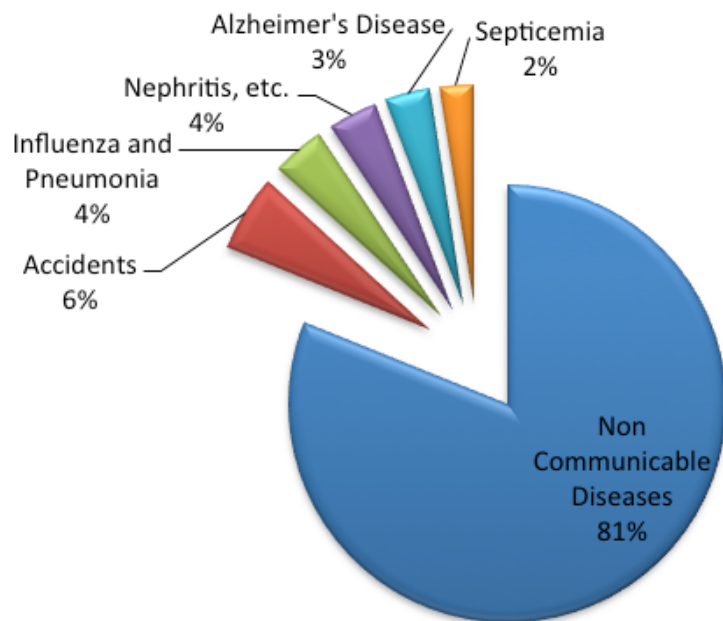
	Responses Percent	Count
\$ 1,000,000	30%	20
\$ 2,000,000	30%	20
\$ 5,000,000 (c)	40%	27
TOTALS	100%	67



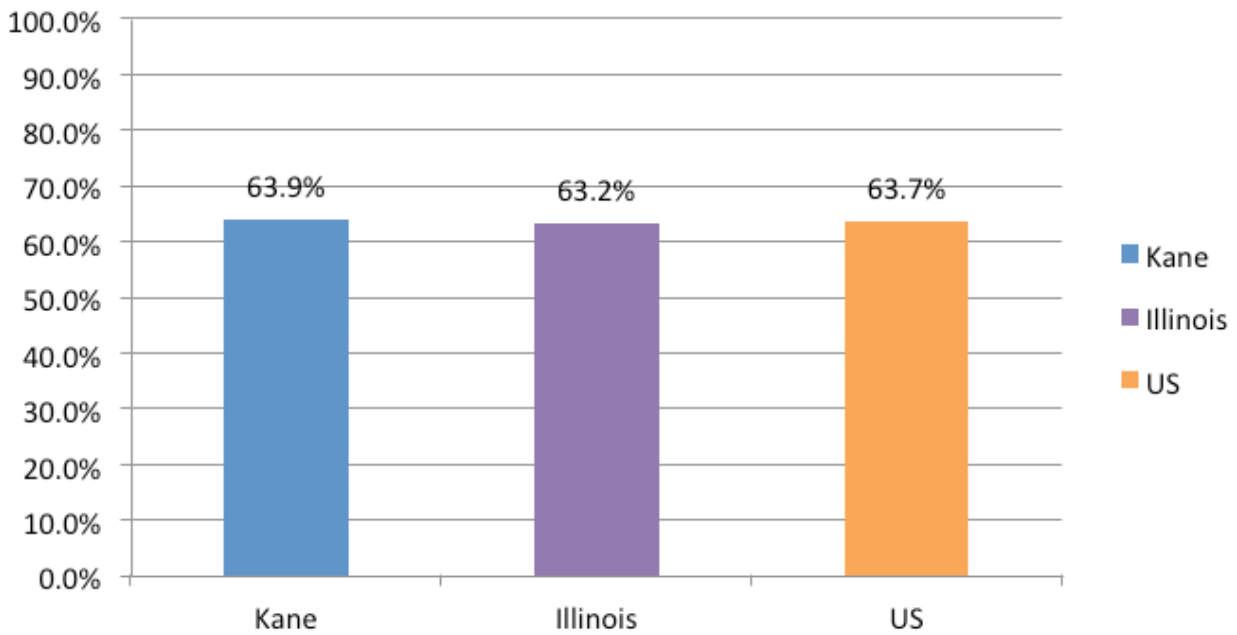
Leading Causes of Death in Kane County 2007



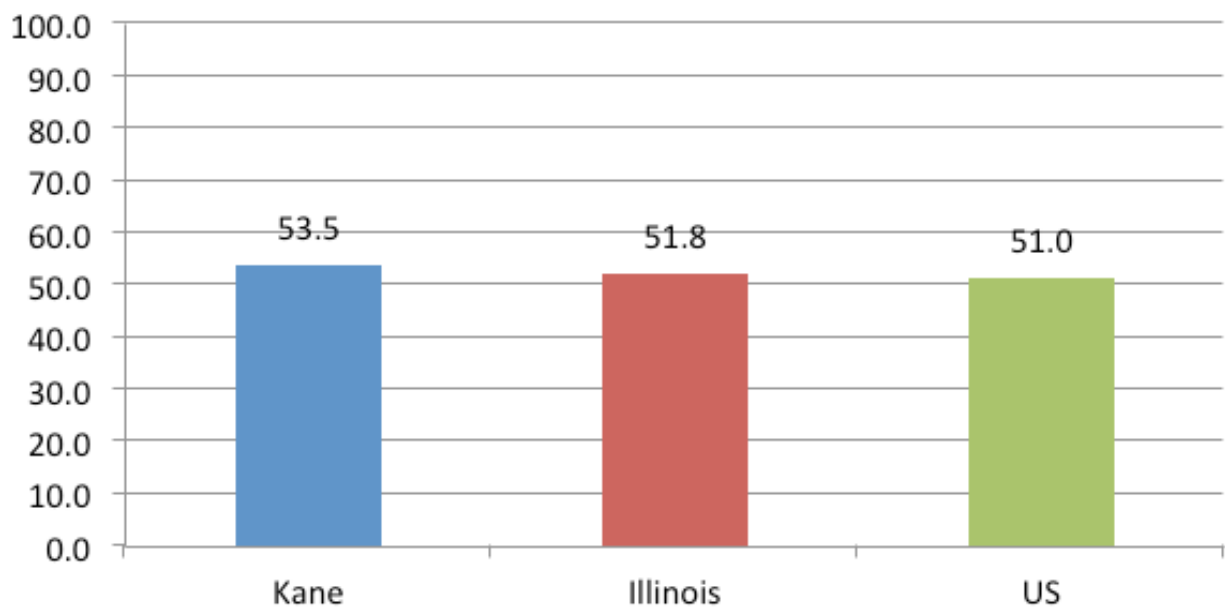
Mortality Distribution, Kane County 2007



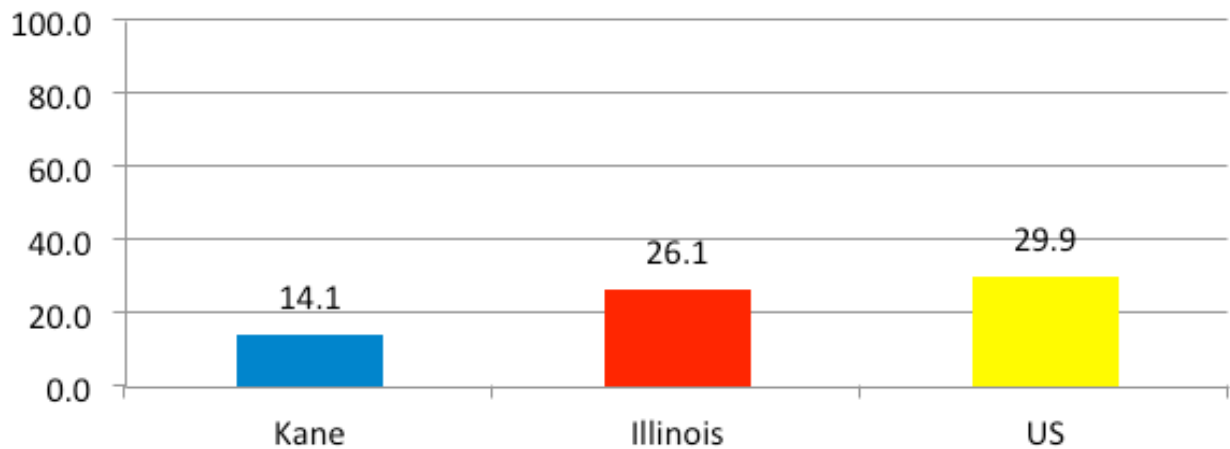
Adults Overweight and/or Obese



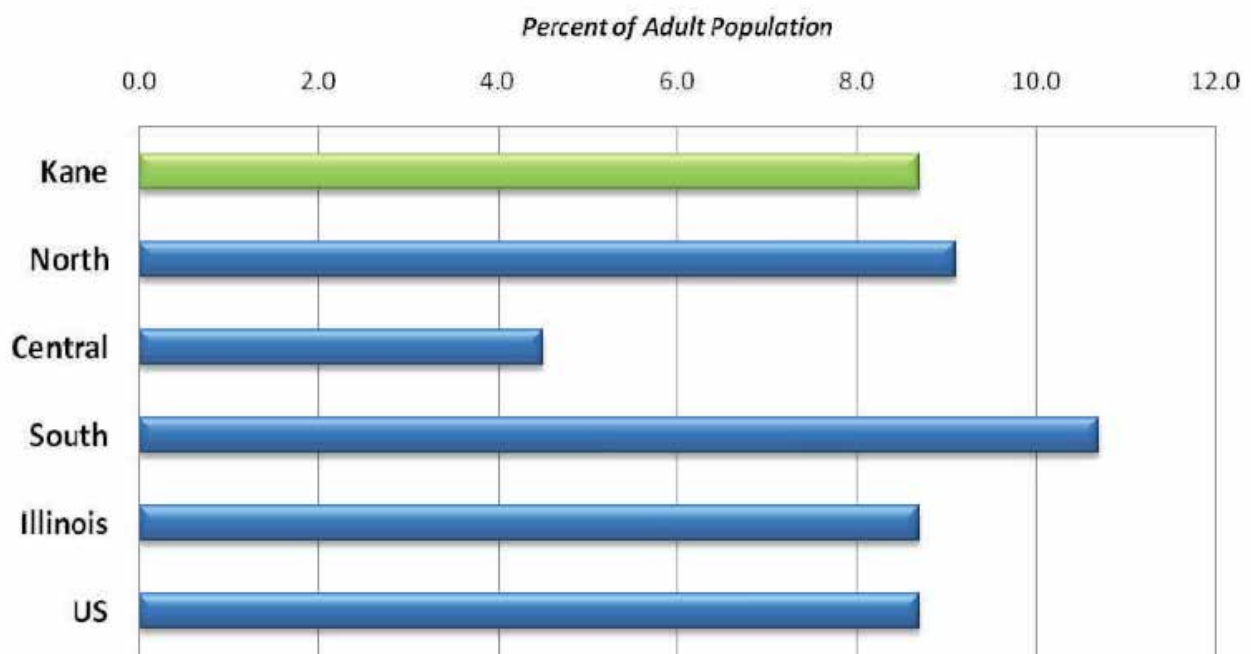
Percentage of Adults who Meet Recommended Level of Physical Activity



Percentage of Children who Engage in Physical Activity for at Least 20 Minutes/Day with Sweating

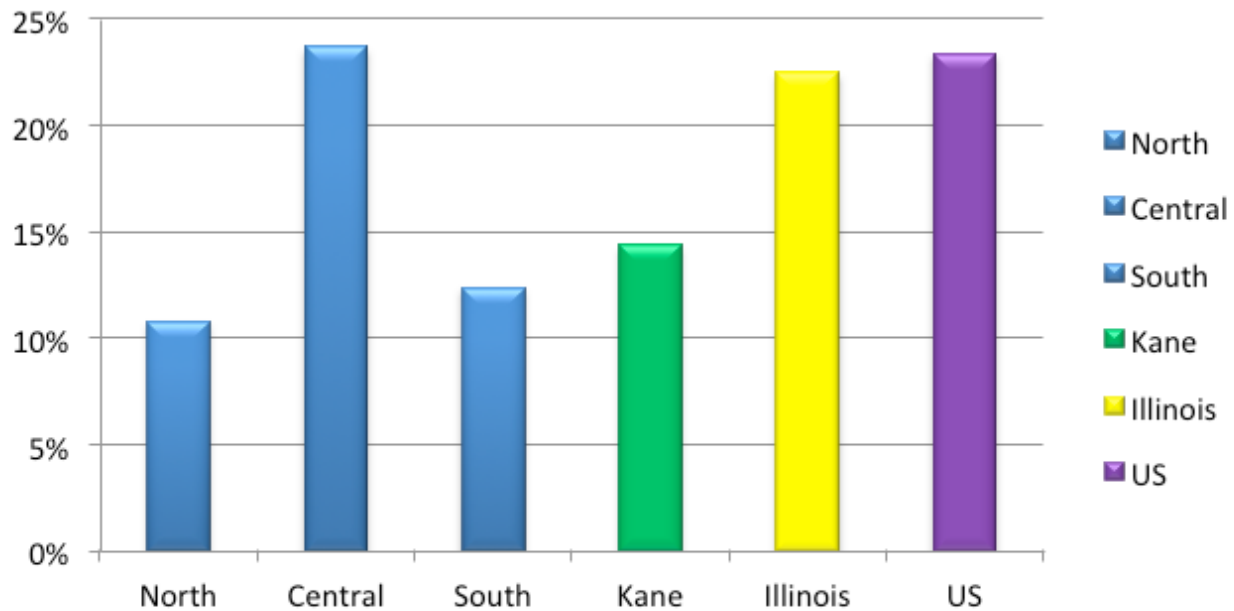


Adults Who Have Ever Been Told by a Health Care Provider That They Had Diabetes, By Kane Regions

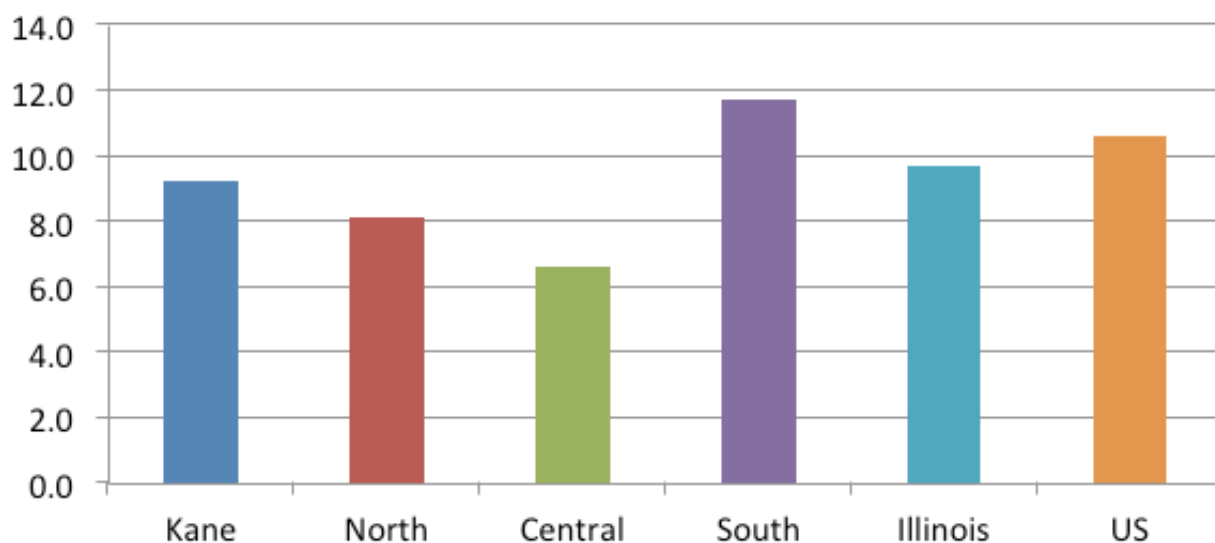


Kane County Community Health Assessment, 2011

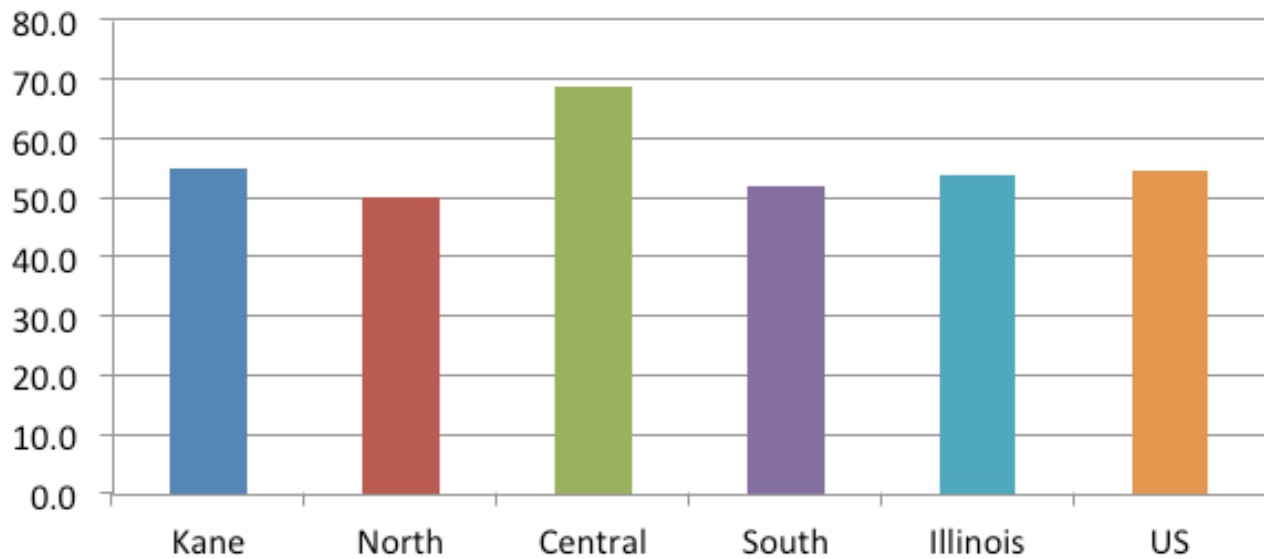
Adults who eat at least 5 servings of fruits and vegetables a day



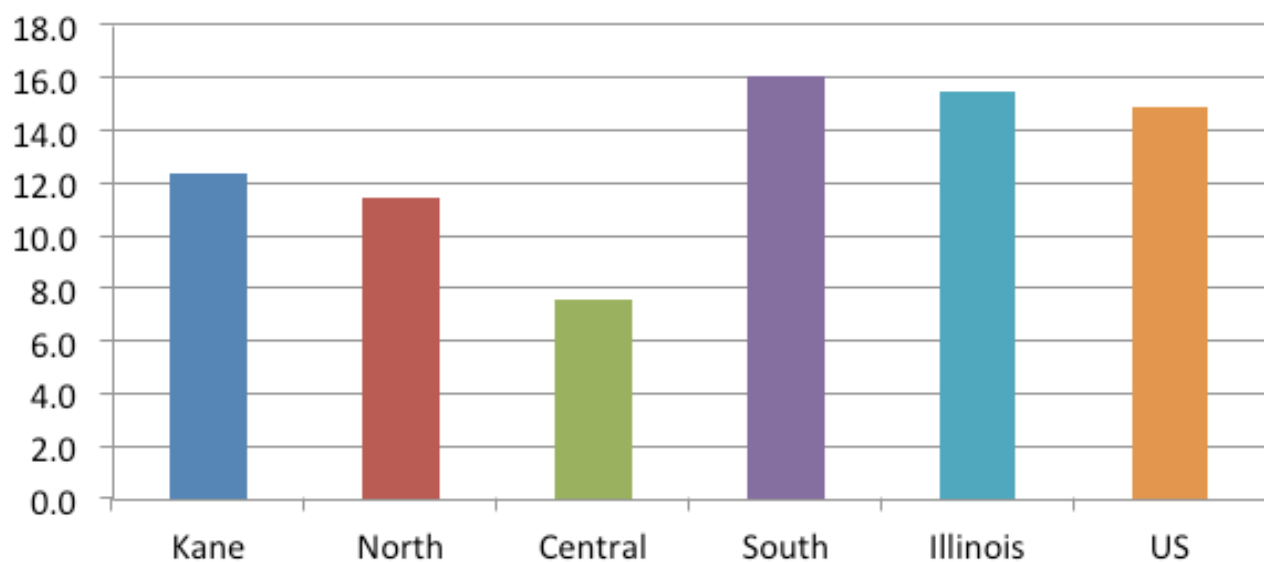
Kane County Adults Reporting Mental Health Not Good 14+ Days/Month



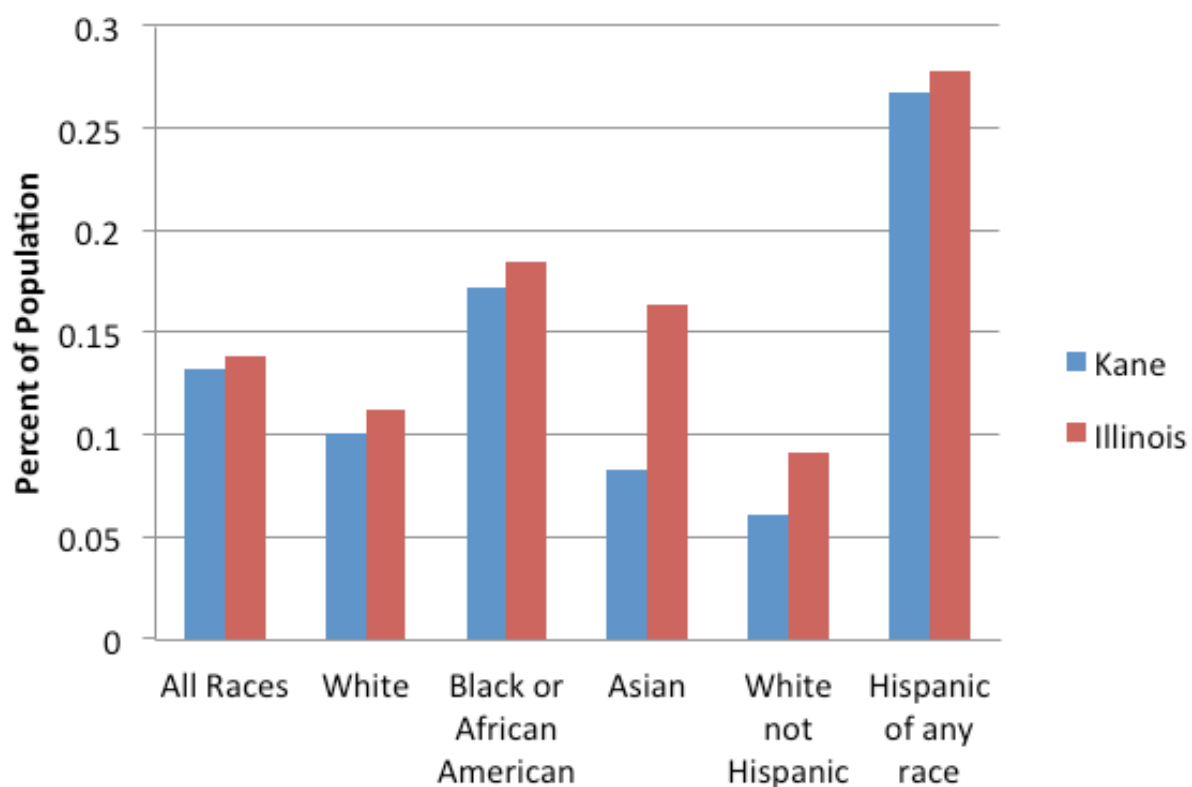
Kane County Adults Reporting General Health Excellent, Very Good, or Good



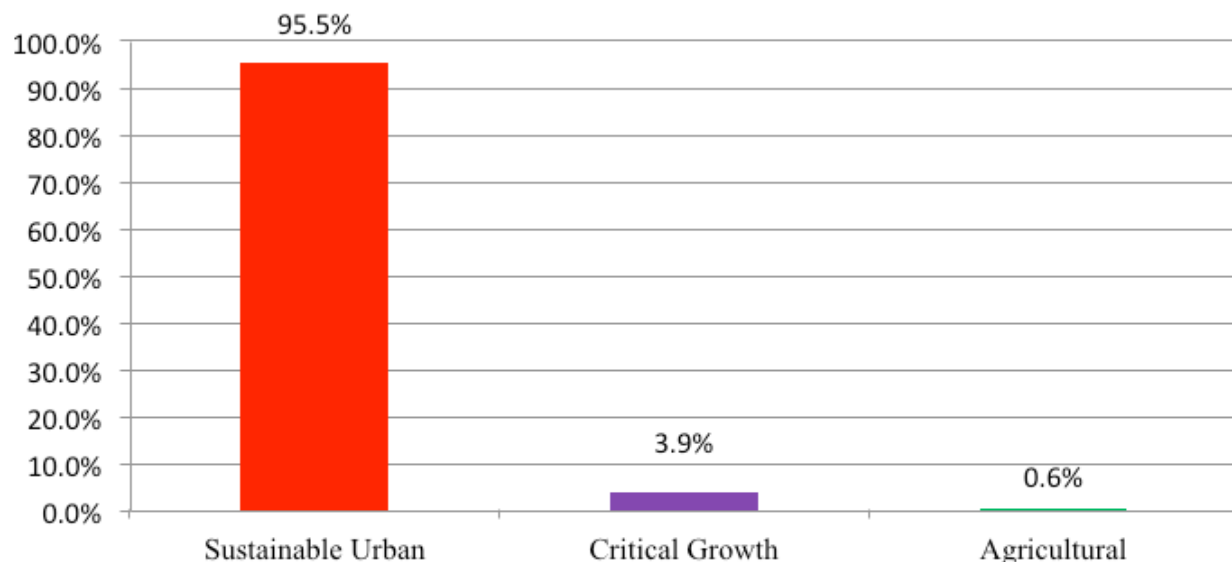
Kane County Adults Reporting General Health Fair or Poor



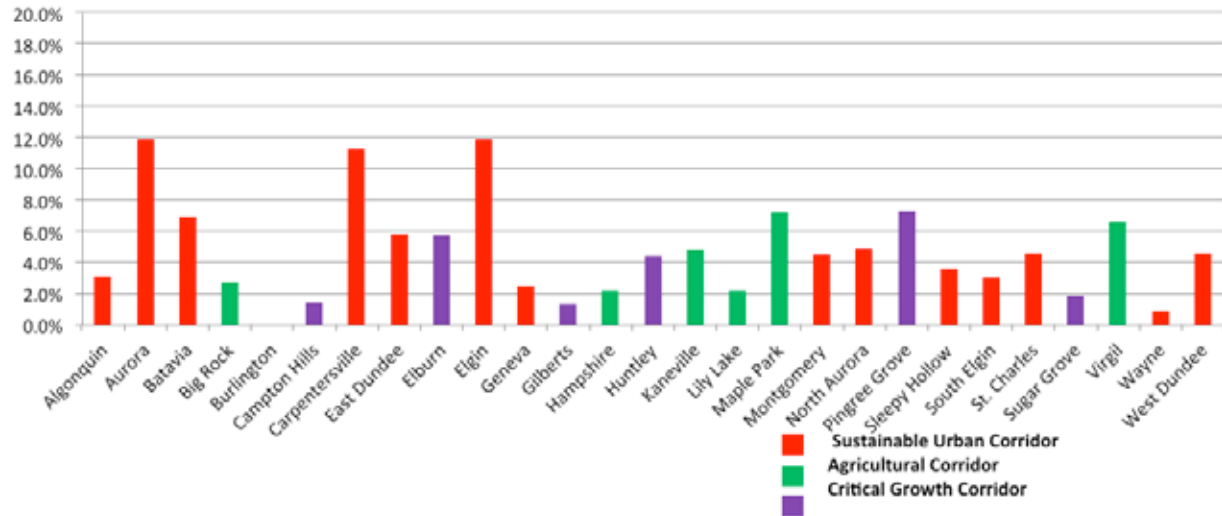
Population With No Health Insurance By Race/Ethnicity



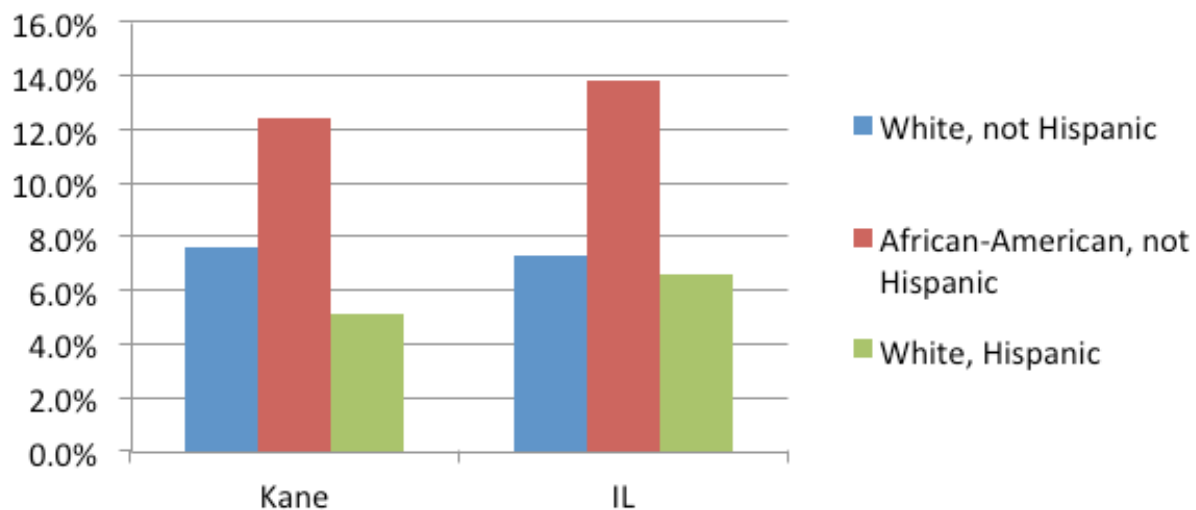
Location of Residents Below Poverty Level by Corridor



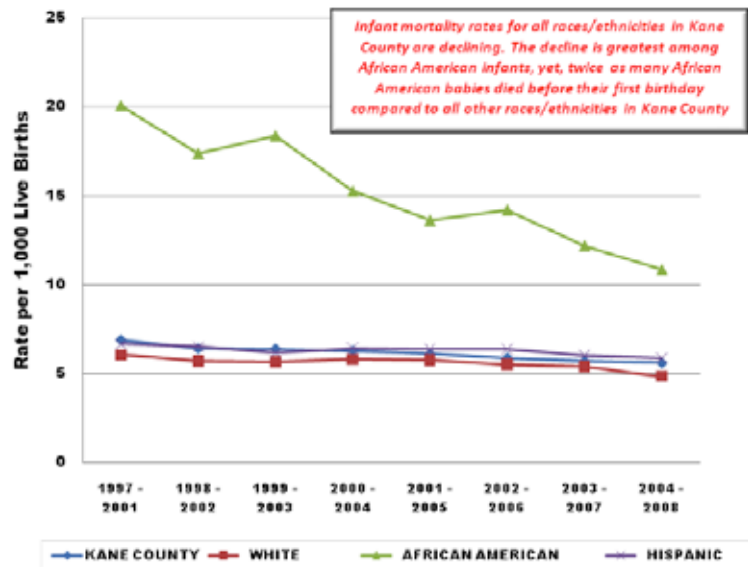
Percentage of Each Municipality Below Poverty Level



2008 Percentage of Births at Low and Very Low Birthweight, < 2500 grams



5-Year Infant Mortality Rates for Kane County By Race/Ethnicity



Source: IL Dept of Public Health

APPENDIX I: ECONOMIC ANALYSIS METHODOLOGY

American Farmland Trust (AFT) was hired to conduct research and suggest recommendations to inform local decision makers about the amendment. A major focus of this work was to identify measurable economic indicators, plans and policies to support community economic development through local food production, and cases where any or all of these had been associated with a Purchase of Development Rights (PDR) or other kind of farmland protection programs.

As part of this effort, AFT worked with Dave Swenson, Associate Scientist in Economics at Iowa State University⁹ to assess the potential economic contribution of local fruit and vegetable production to create net new agricultural productivity and boost the number of jobs and amount of income sustained by the local economy. He analyzed an array of fruits and vegetables that can be produced competitively in Kane County, based on previous work on multi-state, state-wide, and regional food production opportunities. The analysis is sensitive both to regional market demand and local capacity to produce fruits and vegetables not only for the county but also to serve nearby metropolitan demand. Kane County's agriculture and economy do not exist in isolation from its neighbors.

Approach, Data and Terms

Three analyses were conducted to determine production, consumption and economic activity using the methods summarized below. The first scenario was an insular analysis: Kane County production for Kane County consumption only, no competition. The second was a real world analysis: Kane County production to meet surrounding metropolitan demand, recognizing regional competition. Finally a generalized analysis was conducted of Kane County production for 100,000 people, wherever they are.

Area per capita demand was determined using the factors contained in the Iowa Fruit and Vegetable Market Planner at Iowa State University.¹⁰ Factors were assigned to each of 24 fruit and vegetables to estimate reasonable production potential. Production ranges were assigned to meet from 25 percent to 50 percent of annual consumption per capita in each of the three scenarios. Items that received a 50 percent rating were either disproportionately consumed during the growing season, like sweet corn, or store well, like onions, squash and apples. Items consumed less regularly throughout the year but in greater abundance during the growing season, like leaf lettuce or carrots, were scored 25 percent.

⁹ Swenson also is a lecturer in Urban and Regional Planning at The University of Iowa

¹⁰ <http://www.intrans.iastate.edu/marketplanner/>

Regional productivity per acre for each crop was determined using pounds-per-acre factors in the Iowa Fruit and Vegetable Market Planner, adjusted for Kane County agricultural land productivity. This adjustment to the baseline productivity of fruits and vegetables was calculated using a weighted average of corn, soybean and oat yields in the county as compared to Iowa averages for those same crops. There is no reliable data allowing for fruit or vegetable product-by-product yield differences, so this proxy measure was the next best option.

National average prices received per chosen fruit and vegetable for 2011 were obtained from the U.S.D.A. Quick Stats database.

The economic contribution was measured using an input-output (IO) model. For this study, a Kane County IMPLAN IO data base was purchased to base the subsequent modeling and used to determine the economic contribution of the bundle of 24 selected crops based on various types of activity that would be generated with increased fresh fruit and vegetable production including: direct, indirect and induced effects. The modeling system used to estimate the job and income gains is based on the 2011 Kane County economy, and the production factors analyzed were modified to reflect the farm-gate value of production, labor requirements and labor income for the bundle of commodities that were produced. Four categories of economic information were used:

- 1. Total industrial output:** The value of what is produced in the industries – in this case fruit and vegetable crops – being evaluated.
- 2. Value added:** Equivalent to Gross Domestic Product, it is comprised of all payments to labor and proprietors, incomes from properties and other investments, and the indirect tax payments that are part of the production processes. It is the standard way to gauge the size of an economic activity, especially on a comparative basis.
- 3. Labor income:** Labor income is a subset of value added. It is composed of the wage, salary, and benefits payments to workers, as well as the incomes that proprietors pay to themselves. Labor incomes are useful for regional analysis because very large fractions of them accumulate to resident workers, whereas incomes from investments, most of the remaining value added, may accumulate out of the region of scrutiny.
- 4. Jobs:** Jobs are not the same as employed persons because many people have more than one job. Thus, there are more jobs in an economy than employed persons. Also, especially in the food system, not all jobs

are created equally. Some are seasonal, as would be the case for fruit and vegetable production, others are part-time and others are full time. The modeling system provides an annualized value of the jobs associated with each level of industrial output (a full time equivalent) even if the jobs only occur during a short period of time, which would be the case for seasonal and part-time farm jobs.



Then three types of economic activity were analyzed:

- 1 DIRECT ACTIVITY**
All of the economic values listed above. In this analysis, it is the farm gate value of all fresh fruit and vegetable production.
- 2 INDIRECT ACTIVITY**
All firms require inputs into production such as raw commodities, chemicals, technology and mechanical inputs, services, wholesale goods, transportation, banking services and utilities. When levels increase or decrease in the direct sector, that influences the demand for inputs. Another way to think of this is as supply chain activities from seeds to inputs, machinery and financing.
- 3 INDUCED ACTIVITY**
This occurs when workers in the direct and indirect sectors convert their labor incomes into household consumption. This stimulates another round of regional economic activity which, in turn, stimulates jobs and pays incomes. This is the “mainstreet” activity.

Adding these values together resulted in an estimate of the total economic value.

➤ In this report, we have used the terms economic value or economic contribution instead of economic impact. In an IO analysis, the term economic impact is reserved for net increases in regional productivity. Those increases would happen if export sales expanded, or, as is the case here, imports were reduced by substituting locally grown produce for imported foods. However, given the tiny fraction of acreage currently devoted to fruit and vegetable production in Kane County, it is reasonable

to assume that most if not all of the production projected in this study would in fact constitute net new regional activity. But the exact proportion or the total impact cannot be estimated as there are no reliable county-level estimates of existing fruit and vegetable production values and it is likely that acres producing fresh fruits and vegetables have increased since the 2007 Census of Agriculture.

APPENDIX J: ECONOMIC ANALYSIS SCENARIOS 1, 2 AND 3

Scenario 1: Insular Analysis

This scenario calculates the value of Kane County farmers producing solely for the Kane County population. Advocates are often interested in this type of characterization because they want to understand both the magnitude of potential local demand as well as the amount of production required to meet that demand. It is an unrealistic scenario considering Kane County farmers will respond to real-world conditions. The county's boundaries mean nothing in economics; if the markets are profitable, local farmers will sell to customers outside of the county, and surrounding producers will see Kane County as a viable market. Those real-world dynamics are considered in the second scenario.

Kane County's 2011 population was 515,269. As illustrated in Table 1, if Kane County farmers produce the bundle of 24 fresh vegetable and fruits, they would generate farm sales of \$10.94 million, which would require the annualized equivalent of 54 jobs earning \$2.97 million in labor income. Those farmers would require another \$3.46 million in indirect inputs, which would have sustained 40 jobs earning \$1.36 million in labor income. When the direct workers (on the farm) and the indirect workers (the supplying sectors) convert their incomes into household spending, they would induce \$2.78 million in Kane County output, which in turn would require 25 jobs and make \$.91 million in labor income. Combined, the total regional economic contribution be \$17.18 million in industrial output, \$7.84 million in value added (or county GDP), \$5.25 million in labor income, and 120 jobs.

Table 1:
Scenario 1: Insular Analysis - Producing Only for Kane County Demand

	Direct +	Indirect +	Induced =	Total	Total Multiplier
Output \$	10,937,310	3,458,133	2,784,994	17,180,437	1.57
Value added \$	3,783,082	2,311,414	1,745,467	7,839,962	2.07
Labor income \$	2,970,778	1,363,861	910,741	5,245,380	1.77
Jobs	54	40	25	120	2.21

Jobs in the modeling are expressed on an annualized basis. A farm could certainly hire more persons, but the modeling compiles labor demands for the sector in terms of the average hours worked annually per sector. The median pay for Illinois crop and horticulture workers in 2011 was \$10.50 an hour. The national average pay for itinerant farmworkers was \$7.50 an hour. Farm workers typically work long hours during planting, cultivating, and harvesting periods, but are idle, must relocate, or must supplement their incomes from other sources during times when crops cannot be grown.

The table also contains a column of total multipliers. A multiplier is the total value divided by the direct value. It tells us how much the entire economy changes in that category per unit change in the direct sector. The output multiplier of 1.57 means that for every \$1 of output in producing fresh fruits and vegetables, \$.57 in output is sustained in the rest of the regional economy. The value added multiplier of 2.07 means that for every \$1 of value added generated by this production, \$1.07 in value added supports in the rest of the area economy. The labor income multiplier of 1.77 means that for every dollar of labor income paid on the farm (including to the proprietors), \$.77 in labor income goes to the rest of the economy. Finally, the jobs multiplier of 2.21 means that for every job producing fruits and vegetables, 1.21 jobs are created in the rest of the economy.

The direct labor income values per job are comparatively robust at \$55,014. This includes payments to farmworkers as well as to proprietors. In the modeling system, farmworkers were compensated at \$28,100 per annualized job in vegetable and melon production and \$23,300 per job in fruit production.¹² This includes wages and salaries plus employer-provided payments to social security and other wage-like benefits. The average per annualized job is boosted considerably, though, in expected returns to proprietors for their management and labor. In this exercise, and considering the growing season in Illinois (as compared to a national average heavily weighted towards temperate zones) Kane County proprietors were compensated at 40 percent of the national average for vegetable and melon production and 50 percent of the national average for fruit production.¹³

¹² Other adjustments and considerations: First, it must be emphasized that the typical farm operation will hire several persons for comparatively short durations which means that the number of people doing the annualized jobs reported in Table 10 may be three-times or four-times greater. Second, a proprietor producing fruits or vegetables in Illinois would count as less than an annualized national average fruit or vegetable producer owing to the constrained growing season. Finally, when compiling the model for Kane County, it was assumed that the region required 20 percent more labor per acre harvested than national averages owing primarily to differences in the ability of smaller and distributed systems to achieve national-average economies of scale. Those adjustments notwithstanding, the modeling assumes that Kane County fruit and vegetable farmers are operating at sizes that allow them to approximate national average incomes (considering efficiency offsets) per acre of production, but adjusted for the shorter growing season.

¹³ Swenson, Dave. *Selected Measures of the Economic Values of Increased Fruit and Vegetable Production and Consumption in the Upper Midwest*. Leopold Center for Sustainable Agriculture, Iowa State University, March

Scenario 2: Real World Analysis

The second scenario assumes the surrounding region will compete for Kane County demand and Kane County producers will compete with their neighbors and sell to the Greater Chicago metropolitan area and other regional demand for fresh fruits and vegetables. The foundations for this analysis flow directly from Swenson's previous work for the six upper Midwestern states which considered total regional demand for fruit and vegetable production acres considering the demand of all regional metropolitan areas with 250,000 persons or more in population.

That research considered dense urban demand as a primary sustaining element of local foods production and growth potential in the U.S. It factored in the disincentives of distance and allowed for the potential for farmers to produce for metro areas within 150 miles of their home counties. The ability for a county to supply production acres was calculated as the weighted distribution per county across all counties in the six-state area of the number of farms with fewer than 50 acres and, separately, the amount of harvested cropland

per county. This analysis weighted equally the propensity to produce fruits and vegetables (the small farm measure) and the capacity to produce (the harvested acres measure). Once compiled, it was possible to calculate the probability of county acres satisfying regional demand.

Table 2 allocates the regional sales potential for Kane County. Over 90 percent would be sold to the greater Chicago-Naperville-Joliet combined metropolitan demand (including Kane County), and 5.2 percent could potentially be sold in the Milwaukee-Waukesha-West Allis region. The remainder was split among Rockford, IL, Madison, WI, Peoria, IL, the Quad Cities region, and the South Bend-Mishawaka metro area.

Recognizing that Kane County can potentially compete in several metropolitan areas, it is also true that nearby counties can compete quite effectively for Kane County sales, which is part of the greater Chicago combined metropolitan territory. Accordingly, the introduction of regional competition as well as regional demand from beyond Kane County's boundaries helps to redefine the potential regional service probabilities.

Table 2: Allocation of Potential Metropolitan Area and Sales

Chicago-Naperville-Joliet, IL-IN-WI	90.1%
Milwaukee-Waukesha-West Allis, WI	5.2%
Rockford, IL	1.2%
Madison, WI	1.0%
Peoria, IL	0.9%
Davenport-Moline-Rock Island, IA-IL	0.9%
South Bend-Mishawaka, IN-MI	0.6%

Table 3: Real World Scenario-Production Factors

Competitively served regional population	445,328
Acres required to meet seasonal fresh fruit and vegetable demand	2,157
Farm value in \$2011	\$9,452,705
Value of potential farm production per capita	\$21.23
Potential retail value \$2011	\$35,071,604

Table 3 displays the expected factors associated with the second scenario. Considering all regional competition, Kane County producers could be expected to serve 445,328 customers. This would require 2,157 acres to produce the study's bundle of 24 fresh fruits and vegetables; sales would be worth \$9.45 million to Kane County farmers, and those sales could potentially fetch \$35.1 million at retail.

Table 4 shows the values associated with the second scenario. Kane County farmers, in producing for the regional market in competition with producers from other counties, could contribute \$9.45 million in farm level output, which would require 47 jobs earning \$2.57 million in labor income. Those farms would indirectly stimulate \$2.99 million in output and \$1.18 million in labor income to 35 supply sector workers. The direct and the indirect workers would induce \$2.41 million in additional output and \$.787 million of income to 21 job holders. In all, this scenario would yield \$14.85 million in regional output, \$6.78 million in value

added (or county GDP), \$4.533 million in labor income, and 103 annualized jobs.

Scenario 3: Economic Contributions Of Producing For 100,000 Consumers

The following evaluation reduces the values contained in the previous tables to per-100,000 resident values. This creates an intuitively understandable multiplier from which proponents can ratchet up or down different growth objectives.

Table 5 provides the per-100,000 consumers multiplier base factors. Kane County farmers need 484 acres to produce the chosen group of fresh fruits and vegetables. Farm sales would be \$2.1 million, and the potential retail value would be \$7.88 million.

Using these values, we found that only workers making \$.577 million in labor income would be required to produce the \$2.12 million sales per 100,000 consumers. Those farmers

Table 4:
Scenario 2: Real World - Producing for Regional Metropolitan Demand¹⁴

	Direct +	Indirect +	Induced =	Total	Total Multiplier
Output \$	9,452,705	2,988,734	2,406,965	14,848,405	1.57
Value added \$	3,269,575	1,997,668	1,508,541	6,775,784	2.07
Labor income \$	2,567,532	1,178,734	787,119	4,533,384	1.77
Jobs	47	35	21	103	2.21

2010. Found here: <http://www.leopold.iastate.edu/sites/default/files/pubs-and-papers/2010-03-selected-measures-economic-values-increased-fruit-and-vegetable-production-and-consumption-upper-mid.pdf>

would require \$.671 million in inputs, supporting \$.265 million in labor income to 8 jobholders. As they induced household spending, another \$.541 million in output would be produced requiring 5 jobholders making \$.177 million in labor income. Combined, per 100,000 consumers, Kane County farmers would sustain \$3.33 million in regional output, \$1.52 million in value added (or county GDP), and 1.02 million in labor income to 23 jobs (Table 7).

The values in Table 6 are based on a consumer base of 100,000 and meant to be used as a multiplier table to run additional scenarios where population values are the foundation for the assessment. So for an assessment of 200,000 consumers, the values would be multiplied by 2; for 1 million consumers, the values would be multiplied by 10. Or if an assessment considered serving only 50,000 consumers, then the values would be divided by 2.

Table 5:
Scenario 3: Generalized Production
Per 100,000 Consumers

Population base	100,000
Acres required to meet seasonal fresh fruit and vegetable demand	484
Farm value in \$2011	\$2,122,641
Value of potential farm production per capita	\$21.23
Potential retail value \$2011	\$7,875,462



Table 6:
Scenario 3: Generalized Economic Contribution Per 100,000 Consumers

	Direct +	Indirect +	Induced =	Total	Total Multiplier
Output \$	2,122,641	671,131	540,493	3,334,265	1.57
Value added \$	734,195	448,583	338,748	1,521,527	2.07
Labor income \$	576,548	264,689	176,750	1,017,988	1.77
Jobs	11	8	5	23	2.21



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