

PLAN OF WORK REPORT OF ACCOMPLISHMENT



**University of Nebraska–Lincoln Extension
Institute of Agriculture and Natural Resources
University of Nebraska-Lincoln**

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**Federal Fiscal Years
2000 to 2006**

**Plan of Work Report of Accomplishments
University of Nebraska–Lincoln Extension
FY 2000 to 2006**

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Plan of Work Report of Accomplishments University of Nebraska–Lincoln Extension

I. INTRODUCTION:

University of Nebraska–Lincoln Extension is a division of the University of Nebraska Institute of Agriculture and Natural Resources. Other divisions include Agricultural Research Division and College of Agricultural Sciences and Natural Resources.

This Annual Report describes UNL Extension program impacts and accomplishments for Extension for fiscal year 2005, as required by the Agricultural Research, Extension, and Education Reform Act of 1998. It includes the elements identified in the USDA document, “Guidelines for Land Grant Institution - Annual Report”. This federal Annual Report is based on the current strategic plan of Institute of Agriculture and Natural Resources and on emerging issues identified through stakeholder input in anticipation of beginning the next revision of the Institute of Agriculture and Natural Resources Strategic Plan. This federal Annual Report is for the University of Nebraska–Lincoln Extension programs only, but was developed in conjunction with University of Nebraska Agricultural Research Division’s Annual Report.

UNL Extension Action Teams guide our work and are represented under the five Goal areas. Nebraska Action Teams include: Building Strong Families; Community and Residential Environment; Community Resource Development; Food Production and Natural Resource Systems; Nutrition, Health and Food Safety; and 4-H and Youth Development.

In fiscal year 2004-2005, the University of Nebraska–Lincoln Extension funding in support of the programs described in this plan totals \$45,114,946 of state, non-tax, and federal source expenditures. Smith Lever Federal Formula Funds (including regular E3bc, special needs, and CSRS retirement) provided \$4,674,695 or 10 percent of this total. However, the reports included in this report represent all funding streams not just federal dollars.

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A. PROGRAMS (5 FEDERAL GOAL AREAS)

Goal 1: To achieve an agricultural production system that is highly competitive in the global economy.

Overview: (includes sections a, b, c & d)

Agricultural production is the foundation Nebraska's economy and is of particular importance to our rural communities. University of Nebraska--Lincoln (UNL) Extension's education program in agriculture is delivered as a part of our Food Production and Natural Resources Systems Action Plan. The Action Plan has three primary program elements; integrated crop management, integrated animal systems management, and natural resources and environmental management. Many of the program efforts under this goal overlap with the efforts of the Goal 4 to achieve greater harmony between agriculture and the environment.

The Integrated Crop Management (ICM) work groups address the need for sustainable and profitable agricultural production systems and concerns about environmental stewardship. ICM provides educational programs for management of soil fertility, soil and water resources, pests and crop production in a way that sustains agricultural profitability and promotes environmental stewardship. The ICM program is supported by the educational program of the Natural Resources and Environmental Management Action (NREM) work groups. The educational programs offered to support Nebraska's agricultural producers continue to be wide ranging in the breadth of subject matter to address current needs and issues.

The livestock industry plays a significant role in Nebraska's agricultural economy accounting for nearly 65% of the total agricultural receipts in the state. Livestock production offers producers an important means to add value to their grain and other crops. Nebraska has 23 million acres of rangeland and pastures, not counting the crop residues across the state that are used for livestock. Long-term sustainability requires that animal systems be economically viable, ecologically sound, and socially responsible. UNL Extension's Integrated Animal Systems Management (IASM) work groups' education programs encourage producers to manage their operations as holistic units rather than as a set of independent enterprises. The IASM program is also supported by the NREM team with programming that emphasizes proper manure management and comprehensive nutrient management planning that protects the environment.

Precipitation throughout the state was nearer to normal in 2005, but the long term effects of several years of drought continued to impact crop and grassland production. The impact of the drought has been especially critical to surface water irrigation water supplies with most irrigation districts unable to deliver a full water supply and with some irrigators receiving no water. This has been a result of four to six years of drought. We continued to have major educational efforts in the state targeting water management and recovery from the drought concerns. Supreme Court settlements of water litigation between states and new state legislation addressing surface water and ground water conflicts has continued to put new emphasis on irrigation water management. As a result many areas of the state are seeing the implementation of irrigation water restrictions. A number of workshops, web pages, satellite programming, and media releases addressed water management issues from the perspective of the producer while recognizing the economic viability of the rural communities is dependent on agriculture. We continue to provide educational programs to help producers make critical water management decisions.

A decision-support computer program (Water Optimizer) became available in early 2005 to help farmers make better informed cropping choices when irrigation water is limited. The computer tool can help determine whether it would be most profitable to grow different crops, irrigate fewer acres, apply less water to existing crops, or change to dryland production. Nearly 700 users downloaded or purchased the

tool in 2005. The demonstrations of the Republican River Basin Irrigation Management Project provided locations for summer field days to highlight irrigation water conservation strategies. Participants in the 2005 field days estimated they would be able to save 2.1 inches of water (an estimated 10 to 15% savings) and that knowledge would be worth an average of about \$16,000 per operation.

UNL Extension has continued to deliver its successful Crop Management and Diagnostic Clinic program. In 2005, 393 agribusiness professionals attended Crop Management and Diagnostic Clinics, representing 60 Nebraska counties and eight states. These individuals impacted approximately 39% of Nebraska’s row crop acres and participants valued the clinics equal to \$5.74/acre, bringing the estimated total value of the program to almost \$31,000,000. UNL Extension also partnered with the Nebraska Soybean Board to present Soybean Management Field Days at four locations in 2005. The field day participants represented about 564,000 acres of cropland farmed or managed. The average value placed on the knowledge gained and/or anticipated changes in practices was \$7.21 per acre with a potential aggregated impact of approximately \$4,070,000.

The Nebraska Ranch Practicum continues to be a UNL Extension in-depth educational program offering hands-on learning that emphasizes a systems approach to livestock and natural resource management, integrating animals, range and economic considerations. The eight days of instruction over an eight month period helps participants better understand the seasonality of animal and plant cycle interactions and to provide participants an opportunity to evaluate the outcome of different management scenarios. Participants include ranch managers, veterinarians, extension educators, graduate students, agricultural lenders, appraisers, teachers, consultants, and agency personnel. Participants in the 2004-2005 Practicum influenced decisions on 603,000 acres of range, hayland, and cropland, 42,200 head of cattle, and 1,160 people through their ownership, consultation, and educational activity. The total economic impact reported by nine rancher participants in 2005 was \$119,772 or \$13,308 per ranch with a total of 4,719 cows or an average of \$25.38 per head.

The Integrated Crop Management, Integrated Animal Systems Management, and Natural Resources and Environmental Management work groups continue to deliver a variety of educational programs to support Nebraska’s agricultural producers and agribusinesses. This report illustrates just a few of those programs and example impacts. With the current water management issues and financial situation facing agriculture in Nebraska these programs are important to individual producers as well as the state as a whole. The work groups continue to strive to deliver programs that meet the needs of Nebraska agriculture and in a way that allows effective learning. The programs supporting this goal must be ongoing to support the continuing changes in agriculture.

e) Total Expenditures and Full-time Equivalent(FTE):

FFY2005	Federal*	State	Local	Other	Total
Funding:	\$ 1,028,433	\$ 4,739,577	\$ 1,407,569	\$ 2,749,709	\$ 9,925,288
FTE**:					70

* FY2004-2005 Federal Formula Funds (includes Smith-Lever regular E3bc, special needs, CSRS retirement)
 ** Includes both professional and para-professional funded from all sources

Key Theme - Agricultural Profitability
(refers to Plan of Work Goals 1 & 4, Output Indicators 1 & 2, and Outcome Indicators 1, 2 & 3)

- a) University of Nebraska-Lincoln Extension offers a variety of educational clinics, workshops and field days across Nebraska each year that provide critical crop production information. Two examples are the Crop Management and Diagnostic Clinics and Soybean Management Field Days. The clinics included seven programs, mostly offered at the university's Research and Development Center near Mead on topics that included field scouting, disease prevention and treatment, fertilizer and irrigation management, weed identification and more. In 2005 the clinics drew nearly 400 participants from 60 Nebraska counties and seven other states who influence or manage nearly 5.4 million acres. For Soybean Days, extension teams with the Nebraska Soybean Board, the event's sponsor. The event, held at four sites in the state, helps growers increase their market share in the face of growing demand for their crop. The sessions highlighted research, marketing, promotion, new uses and education. In 2005, these events drew 433 participants who are responsible for about 565,000 cropland acres.
- b) The Crop Management and Diagnostic Clinics reached those responsible for nearly 40 percent of Nebraska's row crop acres. Participants estimated the knowledge they gained from the clinic was worth an average of \$5.74 per acre or a total of \$30.9 million, based on the acreage involved. Participants estimated the value of knowledge gained at Soybean Management Field Days at an average \$7.21 per acre, or a total of nearly \$4.1 million based on the acres involved. One participant said knowledge gained at Soybean Days helps him improve his farming and management strategies.
- c) Scope of Impact - State Specific
- d) Funding:
 - UNL Extension
 - Federal Formula Funds
 - User Fees
 - Nebraska Soybean Board

Key Theme - Agricultural Profitability

(refers to Plan of Work Goals 1, 2 & 4, Output Indicators 1 & 2, and Outcome Indicators 1, 2 & 3)

- a) Sunflowers can help Nebraska Panhandle farmers diversify, control pests and disease, spread production risks and make the most of limited water. Strong prices boosted interest in sunflower production in 2005 and increased the need for timely science-based information. University of Nebraska-Lincoln Extension responded quickly to this increased demand for information from first-time and established growers by offering educational programs based on ongoing research at the Panhandle Research and Extension Center. High demand for confection sunflower and sunflower oil had pushed up prices and continued drought left producers seeking crops that need less irrigation water than corn. Extension provided growers information on producing sunflowers, individual site visits and discussions with new growers as part of a first-time grower mentoring program. Extension also offered sunflower tours and incorporated sunflower information into annual crop production meetings. Extension was able to respond quickly thanks to ongoing sunflower studies by UNL researchers in the Panhandle. Over the years, this research has provided information on how best to produce sunflowers in the region and helped increase sunflower acreage.
- b) These timely educational efforts helped the region's growers capitalize on strong sunflower prices. Panhandle sunflower production jumped nearly 170 percent in 2005 from 2004 to 89,000 acres. Much of the crop was grown on limited irrigation acres, thanks in part to extension information. The region's gross income from sunflowers in 2005 was about \$17 million, about triple the 2000-

2004 average.

- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Agricultural Profitability

(refers to Plan of Work Goals 1 & 3, Output Indicators 1 & 2, and Outcome Indicators 1 & 2)

- a) Tight operating margins mean Nebraska crop and livestock producers must find ways to increase profits in their production and marketing decisions. University of Nebraska-Lincoln Extension's Market Journal, an educational outreach television and Web program, provides timely practical information specifically geared to Nebraska agriculture. The focus is on agricultural business risk management. Topics include decisions related to crop and livestock production; commodity market analysis and strategies; financial and transition business planning; agricultural policy developments; and weather. Resource personnel include experts from the university's Institute of Agriculture and Natural Resources and topic experts from the private sector. The 30-minute program began on the Web in 2001. It now airs weekly on Nebraska Educational Telecommunications, the Dish Network and is available at <http://marketjournal.unl.edu>. Market Journal reaches an estimated 12,000 Nebraska households weekly out of a total audience of about 20,000 households.
- b) Market Journal is estimated to have an annual value to agriculture of \$26 million based on a conservative estimate of reaching 20,000 households with each gaining \$25 worth of value weekly. During a recent severe drought in western Nebraska, extension experts looked to Market Journal to inform cattle producers on grazing, feeding and weaning tips, which one specialist said helped save some Panhandle herds. The program is an effective way to reach large numbers of people quickly and efficiently with the latest information.
- c) Scope of Impact - Multiple States
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Agricultural Profitability and Risk Management

(refers to Plan of Work Goals 1 & 4, Output Indicators 1 & 2, and Outcome Indicators 1, 2 & 3)

- a) Soybean rust is a new major disease worry for growers nationwide. University of Nebraska-Lincoln plant pathologists are studying this threat and providing resources to ensure Nebraska farmers are ready to combat soybean rust if it strikes the state. Plant pathologists created a one-stop soybean rust resource Web site at <http://soybeanrust.unl.edu>. Extension teamed with the Nebraska Soybean Board to offer a toll-free phone line with recorded updates and management information and specialists and extension educators developed publications with specifics farmers can use to prepare. UNL plant pathologists in cooperation with extension educators also had 13 field trials in place across Nebraska in 2005. The demonstrations were ready to examine fungicide application and efficacy of different treatments as well as how planting and maturity dates and soybean varieties would influence the disease if it occurred in Nebraska.

- b) This Institute of Agriculture and Natural Resources research and extension effort and close collaboration with the Nebraska Soybean Board has helped growers learn about and prepare for this new disease. Research will provide practical, science-based information growers and companies will use to control rust under Nebraska conditions. UNL Extension will use preliminary results and future field trials to devise an integrated soybean rust management research and education program to support Nebraska growers.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds
Nebraska Soybean Board

Key Theme - Agricultural Profitability

(refers to Plan of Work Goals 1 & 2, Output Indicators 1 & 3, and Outcome Indicators 1 & 2)

- a) Faced with continued drought and looming water restrictions, making the most of every drop of irrigation water can literally make or break many southwest Nebraska farmers. The University of Nebraska-Lincoln Extension's Republican River Basin Irrigation Management Project demonstrates research-based irrigation management strategies in farmers' fields and provides practical information for implementing these practices. The project features year-round educational presentations on water conservation and tours of demonstration sites, which give producers and crop consultants a firsthand look at how these water-saving practices work. In 2005 alone, 230 people attended the seven summer field days.
- b) Program participants estimate the knowledge gained from this program will save them an average 2.1 inches of water per acre, a 10 percent to 15 percent savings over typical irrigation use in the area. Based on the number of participants in 2005 and the acres they irrigate, that amounts to more than 35,000 acre-feet of water annually – enough water to cover 35,000 acres of land with a foot of water. Participants also estimated the knowledge gained through this program is worth an average of about \$16,073 per operation or, conservatively, nearly \$2.9 million annually.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds
U.S. Bureau of Reclamation

Key Theme - Agricultural Profitability

(refers to Plan of Work Goals 1 & 3, Output Indicators 1 & 2, and Outcome Indicators 1 & 2)

- a) Extensive field research shows crop stand is critical for profitable sugarbeet production. Plant population must be correct for maximum yield potential. Plants must be uniformly spaced within the row for high yields and to obtain consistent root size to minimize harvest loss. Since sugarbeets

are now planted-to-stand, both seed population and accurate seed spacing depend on a well-maintained planter. Sugarbeet planter clinics have been cooperatively planned and conducted by UNL Extension; Western Sugar Cooperative Agriculturists; seed company representatives from Seedex, Betaseed and Hillehog; and the John Deere dealerships in the respective growing areas. The electronic seed sensing instrumentation and planter test stand developed by the University of Nebraska Institute of Agriculture and Natural Resources Biological Systems Engineering was used to provide accurate numerical seed spacing information. The clinics evaluated both the planter seed metering mechanism and the seed drop tube. The goal of the Nebraska sugarbeet planter clinics is to improve seed spacing accuracy of Nebraska sugarbeet growers' planters.

- b) The planter clinics continue to be held each year. Some highlights from the early evaluations include:
- 44 sugarbeet planters, including 446 individual planter rows, were tested in 2002 before and again after disassembly, inspection and repair. Over 90 percent of individual rows required one or more replacement parts to achieve original seed spacing performance.
 - 69 sugarbeet planters, including 700 individual planter rows, were tested in 2003 before and again after disassembly, inspection and repair. Over 95 percent of individual rows required one or more replacement parts to match original performance.
 - 27 percent of the John Deere MaxEmerge planter rows required new seed tubes to achieve acceptable performance. This was the first time seed tubes had been tested and the first time the industry realized worn seed tubes could be detrimental to seed spacing. Worn seed tubes actually reduced seed spacing accuracy more than seed meter problems.
 - Seed spacing accuracy was improved 19 percent on 69 planters tested and repaired in 2003. These 69 planters were used on an estimated 40 percent of the sugarbeet acreage planted in Nebraska, Colorado and Wyoming. It is estimated that this improvement in seed spacing accuracy improved yield and reduced harvest loss by a total of 1 ton per acre, resulting in an estimated additional income of \$1.5 million for the acreage planted with these particular planters.

The planter clinics were conducted at the local John Deere dealerships where parts and service were available. The owners and operators of the planters evaluated, the dealership personnel, and the seed company representatives observed and learned how properly maintained seed metering units and seed drop tubes can maximize planter performance. The numerical information on the planters tested has been presented to sugarbeet grower meetings to demonstrate the effectiveness of the planter clinics.

c) Scope of Interest - State Specific

d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Agricultural Profitability and Risk Management

(refers to Plan of Work Goals 1 & 3, Output Indicators 1 & 2, and Outcome Indicators 1 & 2)

- a) Whether they occur naturally, accidentally or intentionally, rapidly identifying plant diseases is critical to controlling their spread and mitigating their impact. In this era of agrosecurity concerns, rapidly diagnosing a potential problem on the spot is important. In 2005, University of Nebraska-Lincoln Extension launched its new Mobile Plant Diagnostic Lab, the nation's most advanced

traveling plant diagnostic lab. Funded through the Department of Homeland Security and UNL Extension, the lab is available to respond to any potential agrosecurity threat and to help farmers diagnose plant diseases on the spot. For example, if soybean rust were to enter Nebraska, the mobile lab would allow UNL plant pathologists to test suspect plants on site and provide results within two hours. The lab is equipped with the latest technology and equipment, including molecular diagnostic tools and satellite communications, for immediate notification of state and federal agencies. The lab also is being used at field days statewide for farmers to bring in plant samples and to increase awareness of plant diseases.

- b) Nebraska is better prepared to quickly detect plant disease on site and to respond to potential agrosecurity threats on site. The on-site lab also can provide results in hours instead of the several days typically needed to mail samples to the university's on-campus lab. The speedy response could be especially critical in a case of agroterrorism or a severe disease outbreak.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds
Nebraska Department of Agriculture/Department of Homeland Security

Key Theme - Agricultural Profitability and Risk Management

(refers to Plan of Work Goals 1, 2 & 3, Output Indicators 1 & 3, and Outcome Indicators 1 & 2)

- a) Nebraska irrigators facing water shortages must make difficult and complex choices about how best to use limited water. An agricultural economist and a biological systems engineer at the University of Nebraska-Lincoln developed the Water Optimizer. This decision-support computer program became available in 2005 to help farmers make better-informed cropping choices such as determining whether it would be most profitable to grow different crops, irrigate fewer acres, apply less water to existing crops or go to dryland farming. Growers load information about their operation such as the amount of water available, soil type, irrigation system type and fuel type for irrigation. They also enter production costs, irrigation costs, crop prices and crop type. The Water Optimizer is available on the Web at <http://extension-water.unl.edu/> or on a DVD/CD set and was promoted at dozens of UNL Extension meetings in 2005.
- b) This Institute of Agriculture and Natural Resources-developed tool is helping Nebraska farmers make more informed choices that conserve water and producer profits. Nearly 700 users downloaded or purchased the tool in 2005.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Animal Health

(refers to Plan of Work Goals 1, 2 & 3, Output Indicator 1, and Outcome Indicators 1 & 2)

- a) Still, sweltering, sticky summer days can be deadly for feedlot cattle. Reducing cattle deaths and performance losses from severe heat and humidity is important to feedlot profitability. Research over the past decade by University of Nebraska-Lincoln animal scientists at the Northeast Research and Extension Center greatly expanded understanding of the nature of heat waves and their effects on cattle. Based on these findings, researchers developed management tools feedlot operators can

use to reduce heat stress in cattle. An extensive UNL Extension education effort helped producers implement these preventive measures. Feedlot cattle deaths steadily declined during the most severe heat waves of 1995, 1999 and 2005 in northeast Nebraska and northwest Iowa – the period during which these management techniques were introduced.

- b) Implementation of UNL's heat stress reduction strategies is saving the region's cattle industry millions annually in cattle deaths and performance losses. In the 2005 heat wave alone, widespread adoption of these strategies saved the region's cattle industry between \$10 million and \$27 million. That estimate is based on the heat waves' severity and the number of cattle on feed at the time.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Animal Production Efficiency

(refers to Plan of Work Goals 1 & 3, Output Indicators 1 & 3, and Outcome Indicators 1 & 2)

- a) Diarrhea is a leading cause of illness and death in beef calves. In some herds, nearly all young calves get diarrhea and up to 10 percent die of related illnesses. Treatment and performance and death losses can cost individual ranchers thousands of dollars annually. University of Nebraska-Lincoln veterinary scientists developed a calving system to reduce calf scours on ranches in Nebraska's Sandhills. The system manages cow herds during calving season to prevent transmission of diarrhea-causing germs and break the disease cycle by moving pregnant cows to a new pasture every week and leaving cows with new calves in the previous pasture. The system drastically reduced calf illness and treatment costs and eliminated calf deaths from scours in initial tests and has proven effective in numerous Nebraska cow-calf herds since it was introduced in 2000. For example, in a 900-head herd near Tryon, scours death rates dropped from 7 to 14 percent in the five years before adopting the Sandhills system to zero after adoption. The team has taught veterinarians and ranchers how to implement this strategy through UNL Extension education programs.
- b) Ranchers who have adopted this system report significantly reducing calf sickness, death and antibiotic use. The owner of the 900-head cow herd estimates he earns an additional \$40,000 to \$50,000 annually since adopting the calving system because of improved calf performance, greatly reduced treatment costs and having more calves to sell. Treatment costs dropped from about \$3,100 per year to about \$129. The owner of a 400-head cow-calf operation said the system virtually eliminated scours problems and estimates it results in about \$10,000 in additional annual revenue.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Animal Production Efficiency

(refers to Plan of Work Goals 1 & 3, Output Indicator 1, and Outcome Indicators 1 & 2)

- a) The 4-State Beef Conference updates producers on new techniques and management practices to

increase profit potential in the beef cattle enterprise. It provides an educational forum featuring specialists from four of the nation's leading beef cattle land-grant universities. The target audience is cow/calf producers and industry people with beef cattle interest. The conference is organized by extension personnel from University of Nebraska–Lincoln, University of Missouri, Iowa State University and Kansas State University. The 2005 conference was the 21st year for the conference which is held at a location in each state. A total of 230 producers attended the 2005 conference including 48 at the Nebraska location.

Topics presented were: economic options for generation transfer of the family farm; pre-weaning vaccination programs, their value and impact on post-weaning performance; disposition - convenience trait or economically important; cattle market situation and outlook, 2005 and beyond: volatile prices and growing supply.

- b)** A post-conference survey showed that participants at the Nebraska site plan to put knowledge they gained to use in their operations to improve profitability. For example:
- As a result, 25% indicated that they were "very likely" and 75% indicated they were "likely" to make management changes based on information received at the conference.
 - Nebraska participants were responsible for a total 2,222 head of beef cows with an average herd size of 108 head. Attendees were also responsible for 1,385 head of stocker calves, which averages 126 head per operation.
 - Respondents estimated the dollar value of these changes at \$15.40 per head. For 2,222 beef cow that participants manage, that calculates to \$34,219 in total savings.
- c)** Scope of Impact - Multiple states
- d)** Funding:
UNL Extension
Federal Formula Funds
User fees

Goal 2: A safe, secure food and fiber system.

Overview: (includes sections a, b, c & d)

Food safety is an on-going concern. As a livestock producing state dependent on income revenue from production there is a continual alert for food safety issues that will impact revenue generation. Bio-terrorism scares enhance the concern for food safety. Additionally issues such as irradiation, chronic wasting disease, bovine spongiform encephalopathy (BSE) or "mad cow disease" and use of food products derived from biotechnology are concerns that consumers have identified. Nebraska Extension education programs continue to focus on food safety for a variety of audiences: consumers, the food industry, retailers, farmers and ranchers, and school lunch food service managers. Examples of program impact include:

Since much of Nebraska's income is based on providing a safe food supply for public consumption. Educational programs targeting food managers of restaurants, schools, nursing homes and deli's are crucial. Nearly 9,000 food service professionals have taken Serv Safe in Nebraska since the program was introduced in the mid-90's. Over 96% of these individuals have passed successfully the Serv Safe tests. This represents millions of safe meals served on a daily basis. School lunch managers and cooks attended the School Lunch Shortcourse on the University of Nebraska-Lincoln campus during the first week in June 2005. UNL Extension's ServSafe course was part of the curriculum. As a result of the ServSafe course, the 20 foodservice managers/cooks gained knowledge in safe food handling practices, sanitation, and Hazard Analysis and Critical Control Point (HACCP). Evaluations indicate that they increased their knowledge of thermometer use by 29 percent, their knowledge of safe food handling practices by 50 percent and their understanding of HACCP by 75 percent. All participants passed the certification exam with an average score of 84. School lunch managers/cooks stated that they learned about foodborne microorganisms and what diseases they cause, temperatures for proper cooking, holding and cooling of food, proper thermometer use, calibration of thermometers and HACCP. Also, they had information reinforced, such as proper hand washing techniques, temperature control during food preparation and service, and sanitation. When they return to their school systems, they stated that they will make changes in temperature control, calibration of thermometers, keeping temperature records, and cooling methods. Also, the managers plan to provide training to other employees on what they learned during the ServSafe course.

Food allergies are a worldwide health concern and cause as many as 200 deaths and countless allergic reactions each year in the United States alone. Food companies and regulators worldwide rely on the Nebraska expertise. The NU-developed tests and training are helping the food industry protect allergic consumers and reduce product recalls. Companies that use the tests can be confident that their products contain only the ingredients listed on the label. At one NU training session, 100 industry representatives changed a manufacturing practice and estimated avoiding potential recall costs averaging \$500,000 each.

Food irradiation is a technology to reduce food borne pathogens and has been available for 50 years. The educational/survey research program was conducted in five grocery stores in two Nebraska communities during the time frame that grocery stores have in-store demos and free samples. About twenty-five percent perceived a difference in the taste of the irradiated meat sample. Sixty-five percent said they either liked or liked very much the irradiated meat; thirty-two percent stated that they neither liked or disliked the irradiated meat. Only four percent stated that they either disliked or disliked very much the irradiated meat sample. When asked if they would purchase irradiated meat if it was available, eighty-two percent responded either definitely yes or probably yes.

Although 4-H livestock exhibitors learn about the animals they raise and show at fairs, they may

not have a good understanding of consumer concerns for meat quality and safety. UNL Extension's Assuring Quality – Livestock Quality Assurance Program for Youth teaches 4-H members more about the responsibilities of raising livestock for food and how their care of the animal influences meat quality and food safety. This program is taught annually to an estimated 6,500 youth. In 2003 evaluation analysis, 80 percent reported gaining valuable knowledge, changing their attitudes about the responsibilities of raising livestock and implementing quality assurance practices. Parents report that their children better understand the time and knowledge needed for animal care.

e) Total Expenditures and Full-time Equivalent(FTE):

FFY2005	Federal*	State	Local	Other	Total
Funding:	\$ 280,482	\$ 1,292,612	\$ 383,883	\$ 749,921	\$ 2,706,897
FTE**:					20

* FY2004-2005 Federal Formula Funds (includes Smith-Lever regular E3bc, special needs, CSRS retirement)
 ** Includes both professional and para-professional funded from all sources

Key Theme - Food Safety

(refers to Plan of Work Goal 1, Output Indicator 1, Outcome Indicators 1, 2 & 3)

- a, b)** Much of Nebraska’s income is based on providing a safe food supply for public consumption. Educational programs targeting food managers of restaurants, schools, nursing homes and deli’s are crucial. Nearly 9,000 food service professionals have taken Serv Safe in Nebraska since the program was introduced in the mid-90’s. Over 96% of these individuals have passed successfully the Serv Safe tests. This represents millions of safe meals served on a daily basis. As a result of ServSafe workshops, participants stated that they learned practical applications of proper time-temperature controls in food service operations and proper use of testing of sanitizing solutions.
- b)** SuperSafeMark® Food safety is important in grocery stores as well as at home or in restaurants. An in-service training offered by the University of Nebraska and Iowa State Extension trained extension educators in the two states to provide this training to their local grocery stores at the request of the Nebraska Grocery Industry Association. As a result of the SuperSafeMark® in-service, 20 extension educators received SuperSafeMark® training and passed the certification exam for the National Registry of Food Safety Professionals. Evaluations showed educators increased knowledge about: retail risk factors by 66% and grocery store food safety by 93%. Educators already were knowledgeable about foodborne pathogens, but further increased their knowledge by 12%. After training, extension educators rated their comfort level for teaching the SuperSafeMark® program on a 5 point scale (1 = not comfortable, 5 = very comfortable). The average comfort level was 3.7 for the Nebraska extension educators. The food safety content of the

ServSafe® for Employees has also been offered in Nebraska. After 5 hours of food safety training 200 participants said they planned to watch temperatures more closely, wash hands better, and sanitize properly. One person stated: “Now I wash all my produce—even watermelons.”

c) Scope of Impact- State Specific

- d) Funding:**
 UNL Extension
 Federal Formula Funds

Key Theme - Food Safety - Consumers

(refers to Plan of Work Goal 1, Outcome Indicator 1)

- a) USDA-FSIS has developed educational materials to promote the use of thermometers with consumers to determine the proper doneness of foods. A thermometer educational display was developed with a 3 question survey for use at health fairs and other educational events to promote thermometer usage by consumers. The educational display contained pictures of different thermometers, pictures and directions for proper insertion of thermometers in food items and the FightBac™ message. One question focused on types of food thermometers that the participants have in their homes. The second question focused on what food items the consumer uses a thermometer to determine doneness and the third question was a knowledge question.
- b) From the two major events, 1200 participants completed the survey. Approximately half of the participants had candy thermometers, while 33% had refrigerator thermometers and only 18% had a dial thermometer. The food item for which participants most often used a thermometer was turkey (24%) while 36% did not use a thermometer to determine doneness. Forty percent of participants correctly answered the question on the proper temperature to cook hamburgers. Survey results indicate consumers need more education on the use of thermometers to determine doneness.
- c) Scope of Impact- State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Food Safety - Game Meat Processing

(refers to Plan of Work Goal 2, Output Indicator 3, Outcome Indicators 1,2 & 3)

- a) An educational workshop, “On the Wild Side”, on game meat food safety was held for hunters and processors in 2004 and 2005. The workshop included field dressing of deer, diseases of deer and game birds, fabrication of a deer carcass, chronic wasting disease, cooking techniques, and canning of game meats.
- b) Meat processors that supply retail outlets or supermarkets are subject to strict governmental regulation to prevent microbial contamination of meat products. However, game meats (unless farm raised and USDA inspected) are not regulated. It is essential that hunters understand the risks of handling wild game and use proper practices to ensure safe meat from harvest to table. Hunting wild game is a huge sport in Nebraska. During the 2004 deer hunting season, more than 55,000 animals were harvested and much of that meat is being consumed. To meet this food safety educational challenge, University of Nebraska-Lincoln Extension developed a comprehensive food safety program for wild game meat. Programming efforts focused on three different but related topics: (1) Workshop for hunters called, "On the Wild Side: Everything You Wanted to Know About Game Meat (fall 2004). (2) "How to Present Game Meat Programs" satellite/video streaming training for extension personnel (spring 2005). (3) Printed and video information for the general public (fall 2005). Evaluations completed at the end of the hunter workshop indicated the value of the program sessions. Ratings of 3.4 to 3.9 (on a 4 point scale) were given to the four presentations/demonstrations; usefulness of the handout materials rated a 3.7. Seventy-two percent of the respondents indicated they were newcomers to extension programming. A follow-up mail survey was conducted three months after the workshop with a 20% response. Several behavior changes were indicated, with the largest number relating to evaluating the quality of the meat (free of disease) and improvements in handling and processing methods such as use of gloves, boning out meat rather than using a saw and monitoring temperatures during storage. Participants also indicated that because of the workshop they were trying different methods for safely preparing and preserving game meat.

- c) Scope of Impact- State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Food Safety - Technology

(refers to Plan of Work Goal 2, Outcome Indicator 1)

- a) A website with 5 biotechnology lessons on food biotechnology was developed for continuing education for professionals (<http://citnew.unl.edu/nutrition/>) and two workshops for food and nutrition professionals were conducted.
- b) Workshop and lesson topics included benefits and potential risks of biotechnology, changes in the nutrient composition of foods produced using biotechnology, assessment of the potential allergenicity of bioengineered proteins in foods, extraction of the genetic material from a plant food, gene expression, and detection of a transgene.
- c) Scope of Impact- Nebraska
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Food Safety - Youth

(refers to Plan of Work Goal 4, Output Indicator 1, Outcome Indicator 1)

- a) Frequent handwashing is one of the best ways to help prevent the spread of disease, according to the Centers for Disease Control and Prevention. Research has shown handwashing helps prevent absenteeism in schools. Health fairs, after-school programs and activities in childcare facilities, preschools and elementary schools are ideal settings to promote handwashing. The purpose of UNL Extension's Sink Those Germs project was to develop an educational activity for educators to use with younger children in these locations.
- b) Over 1600 youth participated in food safety programs. Program examples include:
 - The purpose of UNL Extension's Sink Those Germs project was to develop an educational activity for educators to use with younger children. In the program, children "sink germs" by tossing bean bag "germs" into a container ("sink"). During the first three months, the "Sink Germs" homepage received 7,000+ hits. In an online evaluation, of 201 respondents -- 96% indicated the materials were helpful to them; 95.5% felt "inspired to try something new as a result of these materials.
 - Microbes in Foods, an educational program developed for 4th - 6th graders was used in numerous locations in Nebraska. One educator taught the program through a Spanish interpreter. The program focuses on proper food handling practices that youth of this age do.
- c) Scope of Impact- Nebraska
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - HACCP -Validation of CCP's

(refers to Plan of Work Goal 2, Output Indicator 3, Outcome Indicators 1,2 & 3)

- a) FSIS is requiring the meat and poultry processing establishments to validate the critical control points (CCPs) identified in their HACCP plans. Validation assures that the CCP is working properly in reducing and/or eliminating the identified food safety hazard at the particular step in the meat or poultry production process. Most of the meat and poultry processors were able to develop HACCP plans for their products with assistance and training from UN-L food safety extension specialists. Validation of CCPs within HACCP plans requires thorough knowledge of risks associated with each of the products, behavior of foodborne pathogens in particular products and knowledge of the process itself. In many cases, the processors requested that these microbiological validation studies be conducted by UN-L extension personnel as a third-party activity as an independent assessment of the efficacy of the CCP in reducing and/or eliminating the food safety hazard. Lack of documentation and proper validation of the CCPs can have severe consequences, and can result in withdrawal of FSIS inspection from the facility, resulting in shut-down of operations. University of Nebraska-Lincoln extension food safety specialists were able to work with the processors and validate the CCPs. In cases where the critical limits had to be adjusted, those recommendations were provided to the processors to reassess their HACCP plans and improve safety of their products. Examples of these processors include a small meat processing establishment in Omaha, where pickled products are produced to large meat and poultry processing operations across Nebraska.
- b) This one-on-one validation assistance was timely and the UN-L food safety specialists assisted more than 15 meat and poultry processing establishments in Nebraska. This assistance was critical to the continued operation of these establishments and in assuring safety of their products. In cases where the critical limits had to be adjusted, those recommendations were provided to the processors to reassess their HACCP plans and improve safety of their products. Examples of these processors include a small meat processing establishment in Omaha, where pickled products are produced to large meat and poultry processing operations across Nebraska.
- c) Scope of Impact- State Specific
- d) Funding:
UNL Extension
Federal Formula Funds
CSREES

Goal 3: A Healthy Well-Nourished Population

Overview: (includes sections a, b, c & d)

Helping Nebraskans make informed healthy lifestyle choices leading to an improved quality of life is the focus of Nebraska Extension educational programs. What follows illustrate Nebraska’s educational efforts to help consumers achieve more healthy lifestyles.

Some of Nebraska’s most needy participate in Nutrition Education Programs (NEP) led by UNL Extension. Temporary Assistance to Needy Families (TANF) and Employment First Programs (welfare to work) of the Department of Nebraska Health and Human Services look to NEP to help insure that their clients know how to eat a healthy, well nourished diet, even if limited dollars are available for food. The belief is that individuals are less likely to be ill if they are eating a healthy diet. A research study which included Nebraska families, shows that \$8.00 health care dollars are potentially saved for each dollar put into the Nutrition Education Program. NEP is composed of two educational efforts: Expanded Food and Nutrition Education Programs (EFNEP) and Food Stamp Nutrition Education Program (FSNEP).

Lead poisoning causes serious physical and mental health problems in children, particularly those under age 6. Lead paint is a leading cause of childhood lead poisoning. Nearly all the homes in the older part of Omaha, NE were built before 1978, when lead paint was banned. In one older northeast neighborhood, 42 percent of children tested positive for lead from 1992 to 1998. University of Nebraska–Lincoln Extension teaches classes in Omaha in English and Spanish on how to reduce lead poisoning through housekeeping, nutrition and landscaping, and during common home maintenance projects.

The Nebraska Behavioral Risk Factor Report shows 58 percent of Nebraska adults are obese and 29 percent don’t participate in physical activity during their leisure time. University of Nebraska-Lincoln Extension partnered with Cornhusker State Games (Nebraska Sports Council), Nebraska Health and Human Services System, and Tiger Coaching to offer N-Lighten Nebraska, a team wellness program, from February through May, 2005. Statewide, there were 6,500 participants and a total of 915 teams. During the program, average weight lost by participants in the weight loss portion of the program was 3.1 pounds, and average miles logged by all participants were 662 miles (approximately 5.5 miles per day per participant). Two hundred and fourteen Nebraska Extension staff who participated in an internal N-Lighten competition walked an average of 3.8 miles daily with an increase in average daily miles walked from beginning to end. After 4 months, the increased level of activity was sustained by 30% of the participants.

Note: There are no reports for goals 4, 5, and 6 of the Nebraska Plan of Work due to a change in program emphasis.

e) Total Expenditures and Full-time Equivalents(FTE):

FFY2005	Federal*	State	Local	Other	Total
Funding:	\$ 467,470	\$ 2,154,353	\$ 639,804	\$ 1,249,868	\$ 4,511,495
FTE**:					31

* FY2004-2005 Federal Formula Funds (includes Smith-Lever regular E3bc, special needs, CSRS retirement)

** Includes both professional and para-professional funded from all sources

Key Theme - Farm Safety

(refers to Plan of Work Goal 3, Output Indicator 4, Outcome Indicator 3)

- a) Number of youth completing farm safety education programs: 3500 to 4000 youth and approximately 1000 volunteers attended and completed 26 farm safety day camps in 2005.
- b) Farm safety camp surveys indicate improvements in knowledge and retention of knowledge over 18-24 months. This improvement in knowledge has resulted in youth practicing safety measures. One example in Nebraska was a teen driving a tractor who knew enough to stay in the tractor when a power line fell on the tractor during a thunderstorm – something he had learned at a farm safety camp.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Human Health

(refers to Plan of Work Goal 2, Output Indicator 1, Outcome Indicator 1)

- a, b) From October 1, 2004 through September 30, 2005 Nebraska's Food Stamp Nutrition Education Program (FSNEP) served a total of 3,038 families, 3,235 youth and 908 seniors. Youth are reached through FSNEP's unique and growing School Enrichment Kit Program that is aimed at increasing quality teacher nutrition educational instruction in low-income public elementary schools. Of 3,235 FSNE youth participants, 72% improved at least one food resource management skill, 79% improved in one or more nutrition practices and 54% improved in one or more food safety practices. Of the 888 adult graduates of the NEP Program (exit versus entry data), 75% improved food safety practices, 44% improved food resource management practices, 24% improved their overall nutrition management and 15% improved in all three areas. Those program graduates also made positive changes from entry to exit in their iron, calcium and Vitamin C and B6 intakes. There was an improvement in their number of daily servings from the food guide pyramid groups. The older adult NEP programming remained strong with 188 seniors completing the program in the 2004-2005 fiscal year. A survey of the older adults who had received at least six nutrition lessons from NEP in the last two years revealed that this education is making a difference. For example:
 - 71% had improved their diet quality by drinking more water, eating high fiber foods, eating breakfast, choosing foods lower in fat and cholesterol and eating more fruits and vegetables.
 - 76% had improved their food safety practices by washing their hands more often and not leaving food out at room temperature for more than two hours
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Human Health

(refers to Plan of Work Goal 2, Output Indicator 1, Outcome Indicator 1)

- a, b) General nutrition education programs for extension audiences reached a total of 6243 adults and 4083 youth. A variety of Nebraska audiences were reached at health fairs, as participants in ABCs for Good Health programs which include walking programs and nutrition classes, in general community nutrition lessons, and at health conferences. An on-line nutrition website was accessed by 14,325 persons for newsletter information and nutrition lessons. Specific examples of some of

the program activities follow:

- University of Nebraska-Lincoln Extension partners with Nebraska Health and Human Services System to deliver “ABCs For Good Health” to Every Woman Matters (EWM) clientele who are women, ages 40-64, who are uninsured or underinsured. The clients participate in two to four sessions with four different lessons being taught which include a protocol for a walking program as well as nutrition education activities. A total of 720 EWM women participated in the ABCs For Good Health classes from July 2004 through June 2005 with an estimated 358 ABCs classes being taught. Those participants were 80.3% white, 1.7% black, 17.2 Hispanic, 0.7% American Indian and .1% Asian. Of those participants who completed the classes, 97% set nutrition and/or exercise goals for each class session and 72% reported they had been able to reach those goals all or most of the time.
- “Nutrition Mission” was taught to 479 5th graders in 22 rural Nebraska classrooms over three sessions. Parents received supporting information in a newsletter. Following completion of the program 40% read food labels more often, 15% chose milk and water as a beverage more often, and 30% were choosing snacks to fit into their healthy diet.
- Two hundred thirty-five participants who attended conferences hosted by University of Nebraska-Lincoln Extension (Nutrition and Food Update; Latin Women Celebrating Their Health) gained knowledge related to functional foods or making healthy behavior changes. Participants in the Nutrition Update had the opportunity to learn from internationally known speakers and researchers on functional foods and their applications in today’s busy lifestyles. As a result of the update, participants reported a 40% increase in knowledge of functional foods; a 40% increase in knowledge about dietary supplements; and a 48% increase in knowledge about communicating information about functional foods.
- An Aging Issues Workshop was developed by UNL Extension as an outgrowth of a 2003 Extension survey of the needs and interests of seniors in Nebraska. The 2005 Aging Issues Workshop was presented for agency personnel, extension educators and others who work with older adults and it focused on the most often indicated senior needs and interests including: financial concerns; housing needs; nutrition, food safety and health concerns; and interpersonal relationships. The workshop was attended by 62 state agency and organizational personnel and extension staff. Those who attended reported improvement of knowledge in the areas of nutritional needs of older adults; planning and designing homes to improve their accessibility; roles and responsibilities related to guardianship and the psychological impacts of the care giver role.
- University of Nebraska-Lincoln Extension developed four Power Point presentations concerning the new MyPyramid Food Guidance System after it was launched in April 2005. These presentations were available for downloading from a Website and were among the first available in the nation to help educators implement the new guidelines. As a result, 12,034 downloads were recorded during their first five months on the Web and the feedback responses indicated a savings of at least 8,462 hours of development time by educators through being able to use these Power Points. The “Nutrition and Osteoporosis” web lesson was updated in May 2005 and has since been downloaded and watched by 2,291 individuals.

c) Scope of Impact - State Specific

d) Funding:

UNL Extension

Federal Formula Funds

Goal 4: To achieve greater harmony (balance) between agriculture and the environment.

Overview: (includes sections a, b, c & d)

Nebraska's natural resources are critical to sustaining the state's population and economy. Abundant natural resources provide for agricultural production that is directly responsible for a majority of the state's economic activity. Approximately 50 percent of the state's land is pasture or rangeland, and nearly 40% is crop land. Agriculture's economic strength is due in part to irrigation, which accounts for over 50 percent of crop production. Responsible management of surface water and ground water resources is required to sustain the irrigated crop production base. The land and water resources of Nebraska also support a myriad of biological resources. Wildlife habitat provides for hunting, fishing, and other forms of outdoor recreation. Stewardship of Nebraska's natural resources is vital for a sustainable future and high quality of life. Nebraskans continue to expect improved management of our natural resources.

One part of UNL Extension's educational effort targets youth. Each year we participate in approximately 15 to 20 water/environment festivals, many of which target 4th and 5th grade students. An example of one of the festivals is included in the narrative below. Festivals using pre-, post-test evaluations report that test scores increase 40 to 50 percent after participation. The wildlife habitat evaluation program has helped youth learn about wildlife management and develop life skills such as decision making, teamwork, and written and oral communication.

With over 8 million acres of irrigation in Nebraska irrigation management education is important to conserve limited water supplies and protect water quality. The drought conditions of 2004 and previous years continued into 2005 putting extreme pressures on water supplies and increased production costs because of the increased costs of pumping irrigation water. University of Nebraska–Lincoln Extension cooperates with Kansas State University and Colorado State University to deliver the annual Central Plains Irrigation Short Course. Nebraska extension irrigation specialists delivered educational programming to help producers address drought and irrigation water management issues. Training materials developed by UNL Extension are used by Natural Resources Districts to train and certify producers on nitrogen and irrigation management in ground water management areas across the state. UNL Extension is involved with many communities in their well head protection plans and provides education for agricultural producers in well head protection areas particularly targeting irrigation and nitrogen management.

Conservation buffers installed in riparian zones protect surface water quality. UNL Extension is cooperating with Natural Resource Districts and Natural Resources Conservation Service to encourage the installation of buffer strips. An extension and research effort is demonstrating the use of woody ornamentals in the buffer strips. The ornamentals can help protect water quality along with producing income.

Livestock manure management is a critical environmental issues. Several program efforts are helping producers effectively use the nutrients in their crop production enterprises. A comprehensive nutrient management plan curriculum was developed and is being using to train agriculture professionals and producers. Recommendations for manure nutrient availability were developed cooperatively with seven manure testing laboratories. Four of the five labs doing the most manure samples for Nebraska have now implemented the recommended interpretations.

Natural resources and environment programming will continue be a high priority for Nebraska UNL Extension. The programming will be provided by Natural Resources and Environment, Integrated Crop Management, Integrated Animal Systems Management, and Community and Residential Environment Action work groups. One of the challenges the work groups have is the documentation of impact. The work groups are able to demonstrate outputs, but have more difficulty identifying outcomes and impacts. The impacts for these programs often require long-term documentation. The following program

descriptions are a small sample of program efforts having an impact in Nebraska.

e) Total Expenditures and Full-time Equivalents(FTE):

FFY2005	Federal*	State	Local	Other	Total
Funding:	\$ 701,204	\$ 3,231,530	\$ 959,706	\$ 1,874,802	\$ 6,767,242
FTE**:					51

* FY2004-2005 Federal Formula Funds (includes Smith-Lever regular E3bc, special needs, CSRS retirement)
 ** Includes both professional and para-professional funded from all sources

Key Theme - Agricultural Waste Management

(Refers to Plan of Work Goal 1, Output Indicator 2, and Outcome Indicator 2)

a) Manure can be an ideal fertilizer or a troublesome waste. If properly managed and marketed, it provides phosphorus and nitrogen crops can use and organic matter that improves soil quality, reduces chances that nutrients will pollute groundwater and surface water and provides a new revenue stream for producers. University of Nebraska-Lincoln Extension conducted a manure merchandising workshop to help animal feeding operations become more efficient and environmentally sound in their use of manure. The workshop addressed the regulations pertaining to manure transfers and required record-keeping. A presentation on the value of manure for crop production was followed by a “hands on” computer exercise with the Manure Value Calculator spreadsheet. Four people involved in brokering manure shared their experiences, probably the highlight of the workshop. A final presentation addressed assembly of a business plan for marketing of manure. This workshop was presented by a Nebraska Comprehensive Nutrient Management Plan (CNMP) Team consisting of extension educators and specialists from across the state.

b) Of the 28 participants in this specific program, 45 percent said they planned to begin or expand marketing manure. Sixty-eight percent said they now understood the regulations concerning manure transfers and 73 percent could calculate the value of manure for crop production. Based on producer responses, economic impact was estimated. Two assumptions were made: manure applied, at a rate sufficient to meet corn’s nitrogen needs, to land without a recent manure history is worth on average \$100 per acre due to increased yields and reduced fertilizer costs; and the land gained for manure application through marketing will receive manure once in four years. Increased marketing was estimated to eventually impact 24,800 acres with a monetary impact on crop production estimated to be \$0.62M/yr. In addition, mean expected net gain in profit per feeding operation, due to increased marketing of manure, was estimated at \$5,900 annually.

Most important may be the environmental impact, as those participants intending to begin or increase marketing of manure estimated, on average, that land available for receiving manure will increase by 157 percent; this implies that much less of the manure will be applied to land that has regularly received high rates of application in the past and now poses an environmental risk.

c) Scope of Impact - State Specific

d) Funding:
 UNL Extension
 Federal Formula Funds
 Nebraska Environmental Trust Fund

Key Theme - Integrated Pest Management

(Refers to Plan of Work Goal 4, Output Indicator 2, and Outcome Indicators 1 & 2)

- a) About 24,000 Nebraska farmers are licensed private pesticide applicators. University of Nebraska Nebraska-Lincoln Extension's Pesticide Safety Education Programs, begun in 1976, provide applicators the training they need to use these chemicals safely and effectively. It is UNL Extension's largest adult-education program. As teachers and discussion leaders of PSEP for private applicators, Extension Educators initially certified 753 private applicators (farmers/ranchers) in 2005 and recertified 12,000 private applicators. A pesticide license period in Nebraska pesticide applicators is for three years. The year 2005 represented the largest of the three year cycle for private applicators with half of the applicators involved in PSEP this year. Program topics addressed in the private Pesticide Safety Education Program include pesticide laws and regulations, pesticide safety, environmental protection, Integrated Pest Management, pest recognition, pesticides, and equipment. New program segments were introduced on the soybean aphid and soybean rust in 2005. Educators teach topics that include label information and comprehension, personal protective equipment, exposure prevention, and related crop production topics. The Pesticide Education Resources web site (<http://PestEd.unl.edu>) serves as a continually enhanced complement to support the knowledge needs of the pesticide applicators.
- b) An important component of PSEP is the evaluation by private applicators as they participate and learn in the program. In 2005, 582 applicators representing about 15 counties participated in the PSEP survey. As a result, private pesticide applicators indicated an increased awareness of significant points and they are exhibiting positive behavioral changes as a result of Pesticide Safety Education Programs.

The percentage of private applicators indicating they learned new information and their “learning points” are as follows:

- 54% - - Minimum age of 16 years for pesticide licensing in Nebraska
- 40% - - A written agreement is required to allow the custom applicator to keep restricted use pesticide records on behalf of the farmer
- 35% - - Received and learned for the first time about extension circular, Guide for Weed Management in Nebraska (EC130)
- 49% - - New EPA guideline allows cloth liners for chemical resistant gloves
- 59% - - Pesticide residue management inside tractor cabs

As a result of their participation in Pesticide Safety Education Programs, a significant percentage of private applicators indicated they will change their behavior as follows:

- 78% - - Consider economic thresholds when using pesticides
- 69% - - Use multiple Integrated Pest Management approaches to manage weeds, insects, and diseases
- 74% - - Use personal protective equipment and clothing to minimize exposure
- 78% - - Take action to keep pesticides residues out of tractor cabs
- 88% - - Wash hands after using / handling pesticides
- 73% - - Consider the use of drift reduction spray nozzles

c) Scope of Impact State Specific

- d) Funding:
- UNL Extension
 - Federal Formula Funds
 - EPA/CSREES PSEP Funds
 - User Fees

Key Theme - Natural Resource Management

(Refers to Plan of Work Goal 4, Output Indicator 1, and Outcome Indicator 1)

- a) The 2005 Conservation Security Partnership (CSP) was implemented to inform and educate crop and livestock producers about the eligibility and application requirements for the 2005 CSP sign up. A Natural Resources Conservation Service (NRCS) grant to University of Nebraska-Lincoln Extension funded meetings and educational workshops to achieve this goal. The CSP is a new NRCS conservation program that pays farmers and ranches for high levels of natural resource conservation and management in their crop production and grazing systems. Public information meetings for crop and livestock producers and landowners/landlords included CSP eligibility requirements, the enrollment levels, the enhancement payments concept and the application process. More than 1,500 people attended information meetings. At the self-assessment workshops for eligible crop and livestock producers topics included the self-assessment process and the water quality documentation process. More than 350 people attended self-assessment workshops. In addition to these meetings, many extension educators conducted numerous group meetings and one-on-one help sessions to teach producers about the program eligibility requirements and the self-assessment process.
- b) The CSP Partnership information and education efforts had a large impact on getting farmers in Nebraska to apply for this program. Knowledge and information gained was used to complete accurate and timely applications to enroll qualified acres of their agricultural operations. Over 1,200 applications were received in Nebraska, third ranked state overall, and more than \$5,700,000 was awarded to producers for 2005 in Nebraska, eighth ranked state overall. The number of contracts awarded in Nebraska was 1,092.

The CSP Partnership assisted in bringing significant financial resources to qualified producers, making a lasting 5- to 10-year impact to on-farm income. The total 5- to 10-year impact from the nearly 1,100 contracts is nearly \$11 million.
- c) Scope of Impact - State Specific
- d) Funding:
UNL Extension
Federal Formula Funds
NRCS

Key Theme - Natural Resource Management

(Refers to Plan of Work Goals 2 & 4, Output Indicator 2, and Outcome Indicators 1 & 2)

- a) No-Till Conferences were held at the University of Nebraska Agricultural Research and Development Center (ARDC) and at Holdrege. Topics included “Managerial Accounting for Farmers Considering No-Till”, “Managing Cornstalk Residue”, “We’ve No-Tilled for 15 Years, Where Do We Go From Here”?, “Fertilizer Application in No-Till”, “No-Till Fertilizer Questions & Answers” and “No-Till’s Greatest Allies”. Adoption of no-till helps to reduce soil erosion, conserve moisture, reduce irrigation water requirements, and save energy.
- b) The program influenced crop management on approximately 463,271 acres. With the estimated value of the knowledge gained and/or anticipated practice changes at \$8.02 per acre, the estimated potential value of the conference was \$3,715,433. These figures represent the total of the two locations. Four states were represented this year with 410 participants attending at the combined locations. 55% of the participants were “very satisfied” with the program, while 87% ranked the program as “one of the best” or “above average” compared to other educational opportunities available. 88% indicated “farmer” as their primary occupation. 87% of the attendees indicated they would “probably” or “definitely” make changes in their business/operation based on what they learned.

UNL Extension in addition to providing financial and human resources to market and conduct the program, acquired additional support from the following: Nebraska Soybean Board, Lower Platte North Natural Resources District, Tri-Basin Natural Resources District, Central Nebraska Public Power and Irrigation District, USDA Natural Resources Conservation Service, USDA Farm Services Agency and Farm Credit Services of America

c) Scope of Impact: State Specific

d) Funding:
UNL Extension
Federal Formula Funds
User Fees

Key Theme - Natural Resource Management

(Refers to Plan of Work Goal 4, Output Indicator 1, and Outcome Indicator 1)

a) The 13th annual Water Jamboree was held on April 26 and 27, 2005 at the South Central 4-H Center near Alma and used sites and facilities on the Harlan County Reservoir. This educational, fun day is designed for fifth grade students from Phelps, Harlan, Furnas, Gosper, Kearney and Franklin counties, and the Kansas counties of Norton, Smith, and Phillips. Five-hundred-forty-one students from 19 schools participated in the event this year, representing an estimated 93% of targeted students. Students are assigned to seven different sessions which focus on interdisciplinary water activities related to plants and water, aquatic life, water quality, recreational uses, and how water quality affects wildlife.

b) Classroom teachers attending were asked to rate the educational value of sessions offered at the 2005 Water Jamboree. All of the teacher respondents said they enhanced their water/natural resource/environmental education curriculum as a result of attending the Water Jamboree. Water/natural resource/environmental education curriculum was increased to some extent in each subject area identified on each of the teacher surveys as a result of attending the event.

As a result of attending the 2005 Water Jamboree:

- 85% of the teachers increased classroom curriculum on the water cycle.
- 60% of the teachers increased classroom curriculum on eco-Systems.
- 57% of the respondents increased classroom curriculum in the subject areas of fish and wildlife habitat.
- 55% of the respondents increased their teaching in the areas of physical properties of water and in the groundwater/surface water interaction.

One of the teacher comments from the evaluation was: “Wonderful information for my students. They came back with a growing appreciation of our environment as related to water. I loved the programs as much as they did.”

c) Scope of Impact State Specific

d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Natural Resources Management

(Refers to Plan of Work Goal 4, Output Indicator 2, and Outcome Indicators 1 & 2)

a) Integrated Pest Management is an important tool for improving environmental quality and reducing risks associated with pesticide use in Nebraska's schools. To help schools implement IPM

techniques, University of Nebraska-Lincoln Extension conducted a pilot program with six Nebraska public schools. Representatives of the pilot schools – Columbus, Lincoln, Malcolm, Omaha, Oshkosh, and Sutherland – attended the 2005 Urban Pest Management Conference and the Nebraska Turfgrass Conference. School officials received a set of reference materials, in-service training and ongoing assistance. Extension's IPM in Schools team members provided on-site assessments and created reports of recommendations for each school.

Extension's Community and Residential Environment Action Team/Community IPM work group received \$6,990 from UNL Extension to conduct the pilot school program. Collaborators included representatives from the pilot schools, the Nebraska Department of Agriculture, the U.S. Environmental Protection Agency, Nebraska Department of Health and Human Services, Nebraska Department of Education, Nebraska Association of School Boards, Nebraska Parent-Teacher Association, Nebraska Council of School Administrators and Unicameral staff.

- b) Impact – Surveys conducted following the assessments showed:
- 67% of participants said they would decrease their use of pesticides. None said they would increase their use of pesticides.
 - 83% of participants are now able to identify pest problems that they were unable to identify before participating in the program.
 - 100% would recommend that other Nebraska schools participate in a similar program.
 - Understanding of IPM gained from the pilot project was rated 4.5 on a scale of 1 to 5 with 5=extremely helpful.

All pilot program participants reported they either were currently practicing or were likely to:

- Seal cracks, crevices and holes to exclude rodents and insects, reduced pest movement and eliminate hiding places.
- Improve water drainage away from buildings to prevent mold and pest conducive conditions.
- Use mulch in plant beds to improve plant health and prevent diseases and insects.
- Use IPM to reduce asthma triggers such as cockroaches, mold and rodent dander.
- Use lower toxic pesticides when needed to protect human health and the environment.
- Identify pests before choosing a management strategy.

c) Scope of Impact State Specific

d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Natural Resources Management

(Refers to Plan of Work Goal 4, Output Indicator 2, and Outcome Indicators 1 & 2)

- a) University of Nebraska-Lincoln Extension offers the Nebraska Urban Pest Management Conference annually to meet this need. The conference gives pest management professionals the opportunity to certify/recertify and obtain necessary licenses. The 13th annual conference was Jan. 27-28, 2005, in Lincoln. It was designed for those who involved in structural pest management, wood destroying insects, wildlife damage management, public health pest management, grain fumigation, the food processing industry, sanitation and other related areas.

Conference topics were determined based on surveys of conference attendees, assessing clientele needs, and recommendations from state regulators and a conference advisory committee. The 2005 conference featured 32 speakers and 49 topics covering pest control in structures, grain fumigation and public health. These topics covered pest identification, pest biology, damage identification, decision-making process, pesticide label interpretations, laws/regulations for pesticide storage,

transportation and calibration. Hands-on laboratory sessions for identifying pests and their damage were included. Presenters were locally, nationally and internationally known subject matter specialists.

This conference drew 196 pest management professionals, dealers, exhibitors and educators from 16 states including Nebraska. Of the attendees representing 85 pest management companies, 92% companies were based in Nebraska.

- b) Impact – About 57% of conference attendees completed a follow-up survey: overall 95% of attendees were using knowledge gained at the conference, 95% attendees were very satisfied with speakers and topics, 75% said that they had improved their work efficiency, 40% generated more profit, 77% recognized the IPM practices, 51% improved their pesticide use practices, 70% followed pesticide safety procedures, 61% used non-chemical methods, 56% felt confident to meet certification standards, and 79% gained more knowledge on pesticide laws/regulations.
- c) Scope of Impact Regional
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Natural Resources Management

(Refers to Plan of Work Goals 1, 2, 3 and 4, Output Indicator 2, and Outcome Indicators 1 & 2)

- a) Educating clientele, both urban and rural, on sustainable landscape practices and integrated pest management techniques is important in protecting natural resources from the runoff of excess fertilizers and improper pesticide application.

Creating a Horticulture Paradise has been held each spring since 1995. From 1995-2005, attendance was estimated at 4,252. Originally developed in Washington County, the program has evolved to include Burt, Cuming, Dodge and Washington counties. In 2005, participants completed an evaluation focusing on landscape management practice changes they have made due to knowledge gained through this program series, from 1995- 2005. A total of 77 evaluations were completed.

- b) Impact - Participants estimated their individual annual savings, due to knowledge gained through this program series, ranged from \$20 to \$1,000, with an average savings per participant of \$127.00. Below are a few of the practice changes that resulted in their savings:

- "By buying more disease-resistant varieties."
- "Garden plants and flowers are watered more efficiently with soaker hoses or drip irrigation."
- "Installed drip irrigation and sprinkler systems. I definitely was overwatering."
- "[Hundreds of dollars] saved by choosing hardier [plant] varieties. I pay close attention to [plant hardiness] zone numbers when I purchase anything!"

Participants were asked what changes they made to their previous landscape management practices based on knowledge gained from this program series. Examples included:

- "Learned to choose native perennials for along driveway where I don't water."
- "Selecting shrub roses growing on their own rooting stock instead of grafted varieties."
- "Replaced two trees with improved varieties."
- "I am trying to improve our windbreak and woodlot and got useful advice on shrub

(understory) plant selection and planting methods."

- "I had picked out a bush for the front of our house and then changed my mind after I found out more about it and learned of alternatives."
- "[Planted]Thin-bladed fescue in parkway instead of bluegrass. Less watering and tougher resistance to salt and heat.
- "Ordered four disease-resistant apple trees. Learned to avoid cedar/apple rust."
- "Buffalograss on a terrace worked out well."

Three participants started commercial horticulture enterprises due in part to information gained through this program series. One participant started selling cut flowers at a farmer's market, another began growing woody florals and the third planted a vineyard.

c) Scope of Impact State Specific

d) Funding:

UNL Extension

Federal Formula Funds

Key Theme - Natural Resources Management

(Refers to Plan of Work Goals 1, 2, 3 and 4, Output Indicator 2, and Outcome Indicators 1 & 2)

- a) Sustainable landscapes require fewer inputs (water, pest control agents, fertilizers, etc.) and less maintenance than traditional landscapes. Properly maintained sustainable landscapes reduce groundwater contamination and pollution of surface waters, while retaining high aesthetic quality. Integrating and maintaining a sustainable landscape saves Nebraskans money and allows them more discretionary time to spend nurturing families and serving their communities. University of Nebraska-Lincoln Extension in Douglas/Sarpy counties offers one-on-one assessments to help landowners adopt sustainable practices.

Teaching consumers the principles of sustainable landscaping can be accomplished in many ways - media outreach, symposium/workshop participation and telephone consultation. However, in certain situations, due to limitations of sample size, landscape perspective or communicative ability, an inspection of the consumers landscape and on-site, one-on-one instruction is required. In the first eight months of 2005, 66 consumers were taught to properly maintain a sustainable landscape.

- b) Impact – To measure the impact of this teaching endeavor, an in-depth survey was conducted with participating clients. The survey was simple and concise, but gathered the following information:

Ninety-five percent of clients took action following site assessment to improve their landscape.

These actions included:

- "Followed all suggestions - added mulch, sprayed for scale, etc."
- "Planted autumn service berry to enhance wildlife"
- "Based on your input, we were able to save trees that had been marked for removal"
- "When the tree came down, the rotted section dumped it's sawdust as a clump. We had a hollow shell."

Ninety-five percent learned a new practice or pest control technique to care for their landscape. Examples included "What plants would work in problem areas of my lawn", "Nitrate level needed", and "Symptoms and names of landscape problems". In all cases, all of the questions that the clients had were answered to their satisfaction, while 90 percent rated their site assessment experience as very good to excellent.

A secondary benefit of this educational outreach was gained in that 71 percent of the clients told a friend, co-worker or someone else about their experience with UNL Extension. One client indicated “Yes, everyone I could get to listen”.

- c) Scope of Impact State Specific
- d) Funding:
UNL Extension
Federal Formula Funds

Key Theme - Natural Resources Management

(Refers to Plan of Work Goals 1, 2, 3 and 4, Output Indicator 2, and Outcome Indicators 1 & 2)

- a) Acreage Insights 2004 – Rural Living Clinic Program
Strong growth of acreage developments in the urban/rural interface areas of Nebraska’s expanding population centers is producing an ever-growing audience interested in a wide range of issues associated with "rural" living, including traditional home, family and nutrition topics to proper management of septic systems, wastewater lagoons, private well management, windbreak establishment and maintenance, pasture management, and landscape management for acreages.

To address this interest, a series of 10 two-hour programs were offered monthly from January through October. Each program was offered three times, once in both Omaha and Lincoln, then alternately in either Grand Island or Columbus. Many participants attended several programs in the series. Total attendance for all programs was 413. Presentation topics included native grasses & wildflower, acreage weed control, pasture management, septic systems & waste water treatment, vertebrate pest control, small scale meat animal production, private drinking water systems, ponds, windbreak design & maintenance and grapes. Program topics were chosen from a list of subjects past Acreage Expo participants frequently requested. Whenever possible, presenters stressed the importance of creating sustainable environments on the acreage, best plant management practices to maintain plant health and integrated pest management techniques to prevent or control pest problems.

- b) Impact – Significant knowledge gains occurred for attendees as a result of the programs, including:
 - ‘The basics [about managing a well] that I should have learned 40 years ago before moving to the acreage’
 - ‘How to treat moss scum in [a] farm pond.’
 - ‘Integrating pussy willows for algae control.’
 - ‘Methods of weed control other than chemicals.’
 - ‘How to use the different types of grasses effectively [in a grazed pasture].’
 - ‘Why old [septic] systems fail.’

In addition, a wide variety of actions were taken as a result of the programming that correlated to direct environmental benefits, including:

- ‘Seeded 2.5 acres to native forbs & grasses, converting more of our lawn to nature.’
- ‘...established a [pasture grazing] rotation schedule.’
- ‘Sprayed weeds’ and ‘Worked on thistle removal.’
- Several participants stated that they improved the management of their septic systems by ‘spreading washing over several days’, ‘using less Chlorox’, ‘changed toilet paper’, and generally were ‘much more careful about what does down the drain and stool.’
- ‘Identified good algae, and am going to dump grass clippings somewhere other than by the lake.’
- ‘Presently installing a water recharge pipe to provide [my pond with additional] water in

- ‘I am working on ordering trees for and planting a windbreak.’
- ‘Worked to resurrect a poorly designed windbreak.’
- ‘I had my local coop test my soil for pH & mineral levels [for potential grape production].’
- ‘[I] evaluated our property as to correctness and feasibility [for grape production].’

c) Scope of Impact State Specific

d) Funding:

UNL Extension

Federal Formula Funds

Key Theme - Water Quality

(Refers to Plan of Work Goal 1, Output Indicator 3, and Outcome Indicators 1 & 2)

a) Poor design, improper installation or inadequate maintenance can cause on-site wastewater systems to fail, contaminating water and soil and sometimes exposing people to disease-causing pollutants. University of Nebraska-Lincoln Extension provides on-site wastewater system training for both rural homeowners and installers, pumpers and inspectors. Extension helped establish the Nebraska Onsite Waste Water Association. This association sought state legislation to require state certification for on-site installers, pumpers and inspectors starting in 2006. Extension developed and taught on-site wastewater management classes for these professionals focusing on water quality/environment, engineering/groundwater and biology/soils. In 2005, more than 630 people voluntarily participated in extension training. Extension also has taught rural residents, including acreage owners, how to maintain their septic or residential lagoon systems and spot problems..

b) Educating both those who own and maintain on-site wastewater systems and those who work on them is helping to protect Nebraska's environment and human health. Among installers, pumpers and inspectors, preliminary analysis indicated that 90 percent of those who participated in extension education passed certification tests administered by the Nebraska Department of Environmental Quality. Among acreage owners who participated in extension training, 89 percent said they would take steps to reduce environmental risks from their on-site system.

c) Scope of Impact - State Specific

d) Funding:

UNL Extension

Federal Formula Funds

Key Theme - Water Quality

(Refers to Plan of Work Goal 1, Output Indicator 3, and Outcome Indicators 1 & 2)

a) Surface irrigation is the primary method used to apply water to crops in the North Platte Valley of Nebraska and Wyoming. Improving water application efficiency helps maintain water quality and retain water supplies for use at a later time. To help irrigators improve their on-farm water management, University of Nebraska–Lincoln Extension started a surge irrigation demonstration program in 1999 with assistance from the Wyoming Area Office of the Bureau of Reclamation. The objective of the project was to demonstrate surge irrigation to producers in the North Platte Valley irrigation projects in eastern Wyoming and the Nebraska Panhandle. Surge irrigation is an advanced method of furrow irrigation that helps improve irrigation efficiency and application uniformity. Once irrigation sets have been established by the irrigator, a surge valve is used to automatically

alternate water flow between the two irrigation sets. The process of alternating water between two sets allows periodic drying of the irrigation furrows between water application times. When water is reapplied to the furrow, the results are a reduction of the soil intake rate. This in turn increases the amount of water available to advance water down the furrow. Faster furrow advance means better application uniformity. The ability to reduce irrigation set times will improve application efficiency by minimizing deep percolation and field runoff.

Participating irrigators, were provided with a surge valve and the necessary equipment to install surge irrigation at a selected site. Prior to installation, the extension irrigation specialist who directed the project, made a site visit to help the producer select the most efficient location of the surge valve and the most appropriate piping network. When requested, irrigators were assisted in setting up their surge system, given hands-on instructions to teach them how to use the surge valve and in some cases providing followup in the field to address specific problems or concerns when using surge irrigation.

- b) A total of 20 cooperators participated during the first six years of this program. Of those 20, there was no cooperator who reported being less than very satisfied with the performance of the surge system. Two irrigators felt they could not afford the cost of a surge system. Seven asked for information on a source to purchase a surge valve and/or if there were any cost-share programs available for assistance in purchasing a surge valve. Nine cooperators purchased at least one surge valve. Of these nine, one producer converted his entire 200-acre farm to surge irrigation using three valves. The remaining two producers opted to forgo the installation of surge irrigation and installed a center pivot.

At the end of each irrigation season, cooperators were surveyed for their thoughts on surge irrigation and what they viewed as its primary benefits. Responses reflect the project's benefits:

- “I was able to make 12-hour surge sets which allowed me to change water twice a day.” (This schedule resulted in 6-hour set times).
- “This field is normally difficult to irrigate and it takes about 13 days to get across. With the surge valve, it only required about 4 days.”
- “I would estimate labor savings to be on the order of 35-40%.”

- c) Scope of Impact - State Specific

- d) Funding:
UNL Extension
Federal Formula Funds
USBR

Key Theme - Water Quality

(Refers to Plan of Work Goal 1, Output Indicator 3, and Outcome Indicators 1 & 2)

- a) The Shell Creek Watershed drains approximately 300,000 acres in parts of Boone, Colfax, Madison and Platte counties, and has nearly 1,700 landowners/operators. The topography is typical of northeast Nebraska, with rolling hills and farmland primarily in a corn/soybean rotation. Soil erosion is a significant water quality concern. Shell Creek has a history of flooding, which has frequently caused damage along its length, including the towns of Newman Grove, Lindsay, and Platte Center. In late 1999, about 20 concerned individuals formed the Shell Creek Watershed Improvement Group (SCWIG) with goals that included reduced flooding and improved water quality. University of Nebraska–Lincoln Extension began working closely with this group in October 2002 as part of a USDA-CSREES funded project to promote the installation of conservation buffers in Northeast Nebraska. One facet of this project was a peer-to-peer contact

program called "FarmLink", in which local farmers/landowners (who were also residents of the watershed and members of the SCWIG) were hired part-time to contact their neighbors to explain the need for and benefits of buffers and other conservation practices.

- b) Forty-two landowners were contacted, leading to 11 contracts specifying the establishment of conservation buffers on more than 60 acres of farmland in the Shell Creek Watershed. These included just over 20 acres of grassed waterways that filter and control the runoff from about 215 acres of cropland, and 41 acres of stream-side buffers that help trap and filter the runoff from nearly 2000 acres and physically protect approximately 2.5 miles of stream bank.

During these one-on-one contact sessions, it became quite apparent that: 1) many farmers and landowners were not at all familiar with the many USDA, NRD, and other programs that are currently available to assist with the adoption and installation of conservation practices; and 2) people seemed to like the personal touch of someone coming out to talk directly to them, pointing out specific areas on their land where conservation practices could best be implemented, discussing compensation programs available for taking land out of production, and management changes needed to help ensure practice success.

Following up on these successes and findings, Pheasants Forever, Lower Platte North NRD, the SCWIG, and Extension teamed up to further promote conservation practices in a small (21,000 acre) sub-watershed of Shell Creek in Boone County. Pheasants Forever provided a grant of approximately \$2,500, administered by the Lower Platte North NRD, to Extension for a short-term educational project. In this case, the extension project coordinator made the one-on-one contacts with landowners in the target area.

Contacts, each lasting from 1 1/2 to 2 1/2 hours, were made with 28 individuals, representing ownership of approximately 12,000 acres. Of these, 21 signed a form indicating their interest in adopting one or more conservation practices, and 16 contacted the local NRCS office for more specific program details. To date, 10 landowners have contracted for 13 conservation practices. Seven of these contracts are under the Environmental Quality Incentives Program (EQIP) and Lower Platte North NRD No-till Incentive Program for the adoption of no-till planting systems on a total of 986 acres. It is estimated that this change in tillage practices will result in an annual soil loss reduction of approximately 3,000 tons, and a \$49,300 influx of direct payments over the 5-year contract period. There are two contracts each for grassed waterways and sediment basins, and one contract for a shallow water area for wildlife. Total land area committed to these practices will be about 10 acres, which will filter and control the runoff from about 150 acres of cropland. Direct payments over the 10-year life of these contracts will be about \$11,000. The final contract is for lot reconfiguration and a livestock waste control structure to contain the runoff from a 2,000 head cattle feedlot that previously essentially drained directly into Shell Creek.

Although one-on-one contact cannot be used in all cases, it has been an effective programming tool in the Shell Creek Watershed and will continue to be used in two new projects, the Shell Creek Watershed target area into other parts of Boone and Madison counties and Duck Creek Watershed in Saunders County. Duck Creek is a tributary of Sand Creek which will be the primary water source for the soon-to-be-built Lake Wanahoo, a flood control and recreation area north of Wahoo. Extension will partner with the Prairieland Resource Conservation and Development Council, the Lower Platte North Natural Resources District, the Nebraska Department of Environmental Quality, the Environmental Protection Agency, and the Shell Creek Watershed Improvement Group to provide information and education programs to landowners and others. The primary goal in these projects is to improve water quality in both Shell and Duck Creeks.

- c) Scope of Impact - State Specific
- d) Funding:

Key Theme - Water Quality

(Refers to Plan of Work Goal 1, Output Indicator 2, and Outcome Indicators 1 & 2)

- a) The number of sports turf fields in Nebraska is increasing, while the number of staff that cities and schools have to maintain these fields has remained constant. Training in the past has been limited for this clientele group. Sports turf fields have increased demands due to an increasing number of activities that are played on the fields. Improved management is essential to decrease the time necessary in maintaining the turf to game day appearance. Proper use of fertilizers, pesticides and other inputs is critical in protecting the environment while maintaining safe and durable sports turf fields. University of Nebraska-Lincoln Extension offered a training workshop to address these issues.

The overall theme of the program in 2005 was effective management of resources and labor. Topics covered included fertilizer /pesticide use, overseeding/aerification and identification of trouble spots.

- b) Impact – As a result of the program 73 percent said in the evaluation that they were going to change their fertilizer/pesticide use from information that they received in the workshop. All participants said they were going to change their seeding/aerification practices with the new information that they received. Everyone also said that they anticipated more efficient use of the resources they have available to them as an outcome due to the information they received. When asked if the information presented would help them talk to their supervisors to change the way that they manage the grounds, 73 percent felt the information would help convince the supervisor that a change was needed. The sports turf managers were asked how important Sports Turf Workshops were to their continuing education and 67 percent said it was extremely important while the remaining 33 percent said it was very important.

- c) Scope of Impact - Regional

- d) Funding:
UNL Extension
Federal Formula Funds
User Fees

Key Theme - Water Quality

(Refers to Plan of Work Goal 1, Output Indicator 3, and Outcome Indicators 1 & 2)

- a) The City of Omaha has a National Pollutant Discharge Elimination Systems Phase II permit which requires it to manage stormwater for quantity and quality. Construction sites are a prominent source of pollutants for stormwater runoff. Soil and sediment losses from construction sites can reach up to 30/tons per acre per year and these pollutants are carried to Omaha metropolitan streams, lakes and ultimately the Missouri River. Construction industry professionals have expressed a need to be informed on stormwater permitting, compliance, enforcement, and best management practices to reduce soil and sediment losses from construction sites.

The 2005 Erosion and Sediment Control Seminar taught construction industry professionals about the changes in the City of Omaha's permitting, application and inspection protocol, Nebraska Dept. of Environmental Quality's stormwater compliance and enforcement regulations, the use of grade stabilization structures and buffers to reduce soil and sediment losses from construction sites and

the proper installation and maintenance of silt fences and curb inlet filters. 138 people attended the seminar.

The University of Nebraska–Lincoln Extension in Douglas/Sarpy Counties partners with the City of Omaha, U S Army Corps of Engineers, Papio-Missouri River Natural Resources District, Papillion Creek Watershed Partnership, Natural Resources Conservation Service, Nebraska Dept. of Environmental Quality, Metro Omaha Builders Assn., and the Nebraska State Home Builders Assn. to conduct the seminar.

- b)** Impact – 100% of the 81 returned evaluations said the seminar was useful and 93% said that their knowledge increased. 94 % of the survey responses indicated that they would apply the newly gained knowledge in their work. A six month post survey showed that seminar attendees had applied knowledge gained at the seminar in reviewing erosion control plans, installing best management practices, communicating with contractors, preparing erosion control plans, using curb inlet filters and increasing the use of erosion control products on construction sites.
- c)** Scope of Impact State Specific
- d)** Funding:
 - UNL Extension
 - Federal Formula Funding
 - Nebraska Department of Environmental Quality

Goal 5: To enhance economic opportunities and the quality of life among families and communities.

Overview: (includes sections a, b, c & d)

Multiple issues impact communities, families, children and youth in Nebraska. Economically some communities in Nebraska are strong and proactive while others struggle to remain viable. Those that struggle usually lack one or more of the following elements: well paying jobs, thriving main street businesses, adequate population bases, necessary technology and/or a leadership core to achieve viability in the 21st century. Families face their own challenges. Some are impacted by lack of resources such as time or money, while some parents work long hours to support their families. Some youth, because of lessening time with parents or other mentoring adults, are seeking positive role models and ways to positively use their out of school time. Seventy percent of young children are not provided nurturing child care in community or private setting.

There are multiple UNL Extension programs helping communities and families and youth make informed decisions:

The University of Nebraska has a major effort, called the Nebraska Rural Initiative, to help communities identify and build on local strengths to increase business startups, farm and ranch income and employment. The initiative taps the resources on all four NU campuses to address rural issues and UNL Extension plays a key role. Early initiative efforts include projects to help small businesses increase profits through technology; and coordinating a statewide training team for entrepreneurship and small business development. University students also get involved. Through summer internships in 2005, students from the University of Nebraska-Lincoln's JD Edwards Honors Program brought fresh ideas and technological expertise in rural communities; this internship program is being expanded.

A community lesson on methamphetamine which focuses on the effects on family was presented to over 70 professional, civic, social, church, schools, governmental and community groups with almost 3,000 people. This number does not include presentations by others who have been trained to present this information. About 16,000 participant manuals and 13,000 Neb-facts have been distributed across the state. New partnerships resulting from this project include: Congressman Tom Osborne, Keep Nebraska Beautiful, Nebraska State Patrol, Nebraska Department of Health and Human Service, Nebraska Department of Roads, and Adopt a Highway. A Nebraska Cleanup Volunteer Safety VHS and DVD, and brochure have been developed for use by diverse audiences. Only one in twenty participants indicate they had previously attended an educational program on meth. Comments such as: scary but necessary to hear; very informative; increased my knowledge immensely; impossible to tell you how much I learned were reported on the post evaluation. The amount of information shared on meth at the pesticide training programs has increased. The NE State Patrol marijuana hotline was changed to the drug hotline to be more inclusive and will be listed on all new maps, brochures, etc. As a result of a meth awareness meeting in Indianola, Red Willow County Sheriff Mann indicated there has been a tremendous decrease of meth activity in that community. This has been done through neighborhood meth walks, increased citizen reporting, and increased community cohesiveness. Because mayors, sheriffs, or coalition members heard the meth presentation, vertical domain committees, community wide meetings, and a series of media articles have resulted. This has led to increased citizen awareness and involvement across the state.

The future of Nebraska's rural communities depends on developing a new generation of leaders. A 4-H Youth-Adult Partnership program through University of Nebraska-Lincoln Extension encourages young people to become future leaders through partnerships and participation in community organizations and local government. Youth-adult participation teams in Stromsburg,

Hayes Center, Hartington, and Wakefield paired young people with local leaders in fundraising and hands-on community projects. Projects such as refurbishing a park in Hartington encouraged young people to participate in community leadership and instilled a new sense of ownership. The projects will serve as models as Extension expands the program to serve other rural communities. Additionally teenagers are learning leadership skills and are assuming leadership roles on city and county committees, i.e. park board, city council, 4-H councils.

More than 2,000 guardians/conservators are appointed annually in Nebraska. The only training available was a half hour video. Nebraska judges saw a need for better training for state guardians. They asked University of Nebraska--Lincoln Extension to develop an educational program to replace the video. Evaluations from the pilot year session of the new curriculum documented that the Guardians experienced a statistically significant change in their knowledge and behavior at the (p.<05) level on the seven objectives tested with the greatest changes being in their understanding of what guardianship is, followed by understanding their responsibilities to the court and financial responsibilities - especially understanding the importance of not co-mingling assets. This educational training is recognized by the Nebraska Supreme Court and is now taught by Extension Educators and Nebraska Bar Association attorneys in eleven of the twelve judicial districts.

e) Total Expenditures and Full-time Equivalent(FTE):

FFY2005	Federal*	State	Local	Other	Total
Funding:	\$ 2,197,107	\$ 10,125,460	\$ 3,007,080	\$ 5,874,379	\$ 21,204,025
FTE**:					156

* FY2004-2005 Federal Formula Funds (includes Smith-Lever regular E3bc, special needs, CSRS retirement)

** Includes both professional and para-professional funded from all sources

Key Theme - Community Development

(refers to Plan of Work Goal 6, Outcome Indicator 7)

- a) Better understanding of what their customers want is one of the best ways for small town retailers to keep people shopping locally and lose fewer sales to larger communities. The Consumer Preference and Economic Leakage program uses surveys and education to explore factors that influence consumer preferences and shopping decisions.
- b) Consumer Preference Studies were completed in Lexington, Geneva, and Gering. The studies involved 70 businesses, and over 600 consumers. In addition, the Geneva High School student council and Lexington High School gathered related information from local high school Juniors and Seniors that will assist the community in youth retention, and explore youth shopping preferences. Gering High School is currently involved with the same process. Numerous participating business owners indicated that the study was very beneficial, and developed plans for making changes in their business to improve profitability.

Regional trade territory studies were completed in the Neligh, Elgin, and Tekamah areas and results were compiled and analyzed. In two of the three regions, committees are working to address concerns and begin planning and setting goals for regional improvements based on the information gathered through the study.

- c) Scope of Impact - State Specific

- d) Funding
UNL Extension
Local Business Fees
State of Nebraska

Key Theme - Community Development

(refers to Plan of Work Goal 6, Output Indicator 6, Outcome Indicator 7)

- a) NebraskaEDGE is a community-based entrepreneurial training program designed to encourage the expansion of small businesses, including agriculture operations. The entrepreneur’s course is 12 sessions delivered over the 12 to 15 weeks, (40-44 hours). It is for those individuals who want to expand an existing business and need the skills to make it grow. Participants develop a comprehensive business and management plan during the course to act as the road map for future growth.
- b) One hundred percent of those completing the course evaluation indicated that they would recommend this course to other business owners as they build their businesses. Sixty nine percent of the 176 participants graduated from the courses with completed business plans for their own business. Twenty one percent finished the course sessions but did not complete their business plan. This figure includes 10 banking representatives who participated in the class as course audits only. Eighty percent of the participants indicated that they were “very” or “more than satisfied” with the course. Ninety percent of the participants indicated that the value of this course in relation to their business was “excellent” or “more than good”.

In a five year review of NebraskaEDGE, At least 90% of respondents said the course helped them meet these key goals: enhance business skills, increase self-confidence in business, increase dedication to business, become better employee and increase networking opportunities. Participants reported increasing their knowledge of business planning and management including: preparing a business plan, 87%; importance of planning, 85%; target my customers, 68%; conduct industry research for my business, 64%; importance of risk management and how risk can affect my business, 63%; how to manage my cash flow, 63%. Participants reported at least 50% increase in knowledge of the business community and greater community interaction with other businesses and professional since EDGE.

- c) Scope of Impact - State Specific
- d) Funding
UNL Extension

Key Theme - Community Development

(refers to Plan of Work Goal 7, Outcome Indicator 8)

- a) University of Nebraska–Lincoln Extension, University of Nebraska Rural Initiative and the Center for Applied Rural Innovation implemented computer training sessions for county elected officials and courthouse staff. Extension educators authored and received grant from the Nebraska Secretary of State Grant Review Board to train these county elected officials and courthouse staff in 20 counties.
- b) At present, approximately 220 participants from 14 counties have completed the training. Pre-post training tests show a significant increase of skills has been gained following training. Anticipated

impact is the development of Web sites that will allow citizens to transact business on customer-centered and user-friendly local government web portals.

Impact varies across the state, according to local interests and extension involvement. Technology committees have been formed and Web sites and IT service has been enhanced. For example: As a result of 2004 training in Nuckolls county Selma Ferguson reported that November election night phone calls into the Nuckolls County was reduced by 80% due to the new www.nuckollscounty.gov Web site. A local election volunteer stated, "Just to let you know how much fun it was working on November 11th and I would love to help again. I found out the numbers we plugged into the Secretary Of State Web site were the numbers used on all the other national sites including CNN ,FOX NEWS etc. So it made a difference."

c) Scope of Impact - State Specific

d) Funding

UNL Extension

State of Nebraska Grant

Key Theme - Community Development

(refers to Plan of Work Goals 7, Outcome Indicator 8)

a) Since 2001, University of Nebraska–Lincoln Extension Educators have provided e-Commerce training to more than 600 businesses across the state through the Nebraska Electronic Main Street program. Evaluations from the participants in this four week course are very positive about the program.

b) Fifty-one percent of the businesses that participated in the Nebraska Electronic Main Street have a Web presence and 49 percent are learning how to develop a Web presence. However, 96 percent indicate they will make changes to their existing web site, while 93 percent will increase their efforts to incorporate their web site into their business based on participation in the Nebraska Electronic Main Street Program. Over 80 percent of the participants reported increased knowledge in the following areas of e-commerce: learning new information available on the Web, the e-commerce industry, locating information on Web businesses, finding new information on the Web, becoming more familiar with the Web, using the Web for business, developing and promoting a Web site, learning about competition via the Web, and impact of Web presence.

c) Scope of Impact - State Specific

d) Funding

UNL Extension

Federal Formula Funds

Key Theme - Community Development

(refers to Plan of Work Goal 6, Outcome Indicator 7)

a) Improved customer service for travelers and tourists in rural areas was the goal of Red Carpet Service. Excellent service, positive first impressions, and accurate referrals to local sites increase potential customer traffic and enhance the frequency rate of repeat travelers and tourists. A larger volume of customer traffic ultimately improves the profitability of many of local businesses within the community. The three customized 90 minute sessions function as a train-the-trainer model for

local stakeholders. The program's goals are for the front-line employees to gain enthusiasm, confidence & commitment to meet traveler needs by understanding the importance of tourism, discussing customer service techniques, practicing skills in giving directions and referrals to local sites and businesses, and knowledge of available resources. Following the initial program the sponsoring organization receives all of the program material (teaching outlines, visuals, activity sheets, and customized lists) to repeat the program in the future.

- b) Forty-five individuals from two locations participated in 2004-05. From pre/post evaluations, respondents averaged an increase in knowledge and skill development of over 25% in all 11 areas. The greatest change was indicated in the following: ability to share information about "hidden treasures" in the area (80%), knowledge of where additional local tourism resources were located (70%), understanding about tourism's importance to the region's economy (54%), understanding of the importance of your role in providing service to travelers (49%), and knowledge of the main attractions in your area (54%).
- c) Scope of Impact: State Specific
- d) Funding
UNL Extension
Federal Formula Funds

Key Theme - Community Development

(refers to Plan of Work Goal 6, Outcome Indicator 7)

- a) The Nebraska Rural Institute is a three-day educational program featuring educational seminars, technical direction, and important networking opportunities to build leadership skills. The main focus is to bring those working in the area of rural community development together to share ideas on how to keep rural communities alive. Approximately 150 people participated in the 2005 Nebraska Rural Institute that was held in York, Nebraska. Entrepreneurial Engines & Economic Essentials. This year's Institute included three mobile workshops. Participants gave the mobile workshops high marks. Presenters, facilitators and panelists included many of UNL Extension's personnel.
- b) Over 1,300 people have participated in the Institute since 1998. Past participants have included individuals from South Africa and Australia. The 2005 Institute received an average rating of 3.5 on a scale of one to four (with four being excellent). The Testimonials by past participants best identify the success of the training.

"The program fosters new and intensive leadership for the future of rural areas. This is the best conference of its kind. It is geared specifically toward rural development as a result from community participation. No one will help (rural communities) unless we help ourselves." County Development Alliance Member, Nebraska "The Institute provides an excellent program for rural communities, throughout Nebraska, on ways for them to improve. I was very pleased with the results and brought back ideas to implement throughout the community. It's a great way to exchange ideas, see projects at work and get excited about new activities in communities." City Administrator, Nebraska.

- c) Scope of Impact - State Specific
- d) Funding
UNL Extension
Federal Formula Funds

Key Theme - Community Development - Technology

(refers to Plan of Work Goal 7, Output Indicator 6, Outcome Indicator 8)

a) Seeing how the internet is becoming such a significant tool in our daily lives, it is no surprise that businesses find it essential to expand their markets to the World Wide Web. In March 2005, 104 participants learned how to organize and launch their business websites. Electronic Retailing - Selling on the Internet was a one day workshop presented at four different locations across the State of Nebraska - Alliance, Cozad, York, and Tilden. Topics included e-Tailing Strategy, What does the e-Customer want?, Making the Web Store Run, Web Design Analysis, and You can Build It - But will they come? - Web Site Marketing. The Access eGovernment course shows local governments how to plan information-rich Web sites so they may better transact business and communicate with their citizens. The guide will also help users find the resources needed to design and maintain these Web sites. At present, approximately 220 participants from Antelope, Boone, Burt, Clay, Cumming, Fillmore, Harlan, Jefferson, Kimball, Nuckolls, Seward, Sioux, Stanton and Thayer have completed the training.

b) Anticipated impact is the development of Web sites that will allow citizens to transact business on customer-centered and user-friendly local government web portals.

Training outcomes thus far include, but are not limited to:

- Elected officials are developing budgets and creating policies concerning "security", "privacy", "linking" "accessability" etc for their local county Web pages.
- Local counties are developing, revising and/or updating local web sites resulting in Nebraska citizens accessing information 24/7.
- Seward county officials are discussing the possibility of creating a joint full-service Web site with Seward county, the city of Seward and other smaller towns in the county.
- After searching the Web and learning how sites organize content, Boone county worked with Web designers to reorganize content into a more user-friendly format.
- Counties that previously did not have web pages, now have active web pages and are working towards Web reporting of election results.
- Cumming county officials applied for and received a \$2500 NITC grant to form an e-government advisory committee. One of the first actions of this committee was to send a local representative to a national e-gov Webmasters conference to gain information about the most current practices and policies.

c) Scope of Impact - State Specific

d) Funding
UNL Extension
Federal Formula Funds

Key Theme - Family Resource Management

(refers to Plan of Work Goal 8, Output Indicator 10, Outcome Indicators 9, 10, 11 & 12)

- a, b) "Preventing Credit Card Blues at 22" was taught to high school seniors across Nebraska. An evaluation of more than 2,500 high school seniors showed statistically significant change on seven of the ten questions evaluated. As a result of this program, students were better able to:
- define credit;
 - identify factors to consider when shopping for a credit card;
 - identify sound practices for managing credit card debt, especially with reference to: paying on time; properly handling the disposal of unwanted credit cards; and identifying the best way to build a credit history;
 - identify sound practices to protect personal identity, especially with reference to: keeping personal information properly secured; and properly reporting lost or stolen credit cards.

One teen shared that, "he would never get more than one card and plans to pay it off each month, he didn't want to be paying off credit card debt for 20 or more years". Programs were given to Wayne State freshman students and parents, senior centers, adult classes, UNL alumni association and civic organizations to educate the need to understand credit cards.

Money Day camp and school enrichment programs reached 1504 elementary and middle school age children. During a two day camp at the University of Nebraska -Lincoln East Campus, 190 sixth graders learned seven financial education concepts including: wants and needs, budgeting, checking and debit cards, how credit works, how to count money and make change and the impact of time on savings, with significant gain ($p < .05$). The 2005 Money Camp gave 92 youth an opportunity to learn about making money decisions as part of a interactive financial program. The camp featured a variety of activities including a real-life simulation where participants learn about managing in the "real world." The simulation that was part of the Money Camp program and also has been presented for 15 teens who have had problems with the law and for a class 24 high school seniors. Additional school enrichment programs have reached over 1183 youth in Nebraska.

Nearly 1000 unique visitors were reported to have visited the new website of the Building Strong Families Financial team, PayDownDebt.unl.edu. This web site includes a step by step process to help individuals reduce debt. Included in the web site in an interactive worksheet to figure debt reduction and how long it will take to eliminate debt. Additional information is available as marketing materials include the key components of the process. The site has been a source for news and radio tapes as well.

A web site to help youth know the decisions and costs associated with purchasing a car went online in early September 2005. The site, <http://autotown.unl.edu>, features a diagram with buildings depicting businesses a teen would visit when buying a car. Quizzes help teens determine financing and test their knowledge about car-buying basics. UNL - Extension has distributed posters to high schools throughout the state to let teens know about the new site. The site, contains an evaluation and one teen estimated, by using the site, the value of knowledge gained was \$3,000.

- c) Scope of Impact - State Specific
- d) Funding
UNL Extension
Federal Formula Funds

Key Theme - Family Resource Management

(refers to Plan of Work Goals 8 & 9, Output Indicators 10 & 11, Outcome Indicators 9, 10, 11 & 12)

- a, b)** Building Nebraska Families (BNF) provides education to the hard-to-employ rural clients of Nebraska's Health and Human Services System welfare to work program. By learning necessary family management and life skills, families are better able to manage family resources and maintain their family while securing and sustaining employment and can more effectively utilize a community network.

In the 2004-2005 reporting period, 52 (14%) BNF participants completed BNF. Completion means that they are self-sufficient and not receiving welfare to work monies. This group's mean monthly income of \$483.43 at entry into BNF is significantly different than the mean income of \$1020.27 at exit. Upon reviewing their entry versus exit behavior checklists, significant differences (moving in a positive or negative direction as appropriate) were seen in 15 of the 20 behaviors measured. The 52 graduates reported that they felt more positive about their life, setting goals, solving problems on their own, paying bills on time and in full, keeping a record on how they spend their money, having a plan on how they will spend or save their money each payday, using exercise to work off stress, praising their children, using positive communication with their family, having family fun together, being hopeful about the future and feeling less depressed. This year more significant changes were found in behaviors measured in the statistical than in the past.

At least 6 months after completing BNF, graduates were contacted for a followup. The followup showed that graduates continue to improve their family and life skills after graduating from BNF. They continue to be positive about their life, can cope with change, set goals for themselves, solve problems on their own, use better financial management skills, are hopeful about the future and feel less depressed. Some of the mean scores for these behaviors have actually increased since graduation. This suggests that BNF is accomplishing its goals of helping families develop and use these skills once they leave the program

Since BNF was started in 1999, Extension Educators have graduated a total of 186 (22.2%) of 836 participants enrolled. Eighty-five have re-enrolled into BNF and are not counted in the 836. As many BNF graduates as could be located were contacted to find out what they are doing and how they are using the education they received from BNF. In compiling comments from those contacted, it was noted that parenting, family and money management were the major areas where participants felt they had benefitted. One graduate stated that it was the most support she had gotten. She loved it.

From Oct. 1, 2004-Sept. 30, 2005, 356 participants received at least one educational contact for a total of 3,777 teaching contacts. Educational contacts reached a total of 1267 individuals which includes 767 children. In addition, those completing BNF reported a total of 638.33 assignment hours during the time they were enrolled. The BNF families are not typically those who complete assignments so this is a significant accomplishment.

BNF has a total of 10 educators supported by this program and serves families in 56 rural Nebraska counties. Nebraska Health and Human Services has renewed the BNF contract effective until Sept. 30, 2007 for a total of \$2.2 million.

- c)** Scope of Impact - State Specific

- d)** Funding
UNL Extension
Federal Formula Funds
Department of Health & Human Services System

Key Theme - Leadership Development and Training

(refers to Plan of Work Goal 4, Output Indicator 4, Outcome Indicator 5)

- a) LeadershipPlenty is built on the core value that people working together can tackle community issues. Originally sponsored by the PEW Partnership for Civic Change, the curriculum is organized into nine modules: identifying individual talents, community asset identification, group development, effective meeting management, dealing with conflict, developing partnerships, turning ideas into action, communicating for change and valuing evaluation. The program is customized at each location to reflect local needs. Typically each module is three to six hours in length with the entire program covering nine months. The program culminates with the development of a group action plan for a community project. At each location the program is sponsored and supported by a public/private collaboration.
- b) The program provides an opportunity for each class member to learn, practice and then utilize the tools they learned as they progress through the program. Since the program started in 2002, 132 participants have completed the program. In 2004-05, 52 individuals from Thayer, Butler, Perkins and Chase counties participated in LeadershipPlenty. Although results vary at each site, responses often reflect themes, similar to those identified at the Butler and Thayer County sites which indicated: 100% of those responding said they anticipate working with their Leadership Plenty partners on solving or addressing current problems/issues, 61.5% estimated their knowledge and understanding of leadership is attributable to the LP program, and 71% said that they plan to use their leadership training in their job, assisting in meetings, developing agendas and working with a development group. One location, Butler County, was recognized by the Nebraska Community Improvement Program as a state winner in the community leadership category, indicating the program's high standards of excellence.

In one case study of five former participants, in-depth interviews were conducted three years after completing the local program. During the interviews it was noted that each person had taken on significant leadership roles in their community (two school board members, a hospital foundation board member, museum board member, and a mayor) and each credited the program in giving them the tools and confidence to be in those roles. One individual, after realizing their county did not have a lodging tax, felt empowered to research the process and present the concept to the local governing board for consideration. She openly credits her participation in the LeadershipPlenty program for giving her the confidence to move ahead with this project. Due to her work, the county recently created a lodging tax which will regularly collect dollars to help fund tourism efforts in the future.

- c) Scope of Impact - State Specific
- d) Funding
 - UNL Extension
 - Federal Formula Funds

Key Theme - Parenting

(refers to Plan of Work Goal 9, Output Indicator 11, Outcome Indicators 10, 11 & 12)

a, b) “Family Treasures” Book

A team of educators, along with Dr. John DeFrain, have written a book based on the six family strengths: Family Treasures: Creating Strong Marriages and Families. This piece, designed for the popular press, gives families the opportunity to assess their family strengths and get real hands-on opportunities for families to improve upon their targeted goals. A satellite training teaching how to use this book is scheduled for April 2006.

TIPS (To Improve Parenting Skills) columns

Parents are usually reluctant to attend parenting classes because they are afraid people will see them and think they are bad parents. As an alternative to conventional classes, the idea for a parenting class published in newspapers and posted on the extension Web sites was developed. Short articles on various parenting topics with suggestions or ideas for the parents to try during the week. Since January 2004, 92 articles have been written and published in newspapers across the state. All of the articles were posted on the Building Strong Families Web site and many were posted on extension county Web pages. Circulation numbers times number of times the articles were printed amounted to a potential of nearly 2 million times that parenting information was available, through newspapers, to residents of Nebraska. The TIPS articles have become one of the top hits on the UNL for Families website, with 13,151 in FY2005. Feedback included the following comments:

- "I read all of your articles. They are wonderfully written and so valuable for families. The breakdown of families is so sad today. I hope many apply this counsel and suggestions."
 - "It gives me alternatives to think about for handling different situations with my girls."
- Parents are thinking about their parenting skills and, possibly, reassessing their effectiveness.

A total of 3,013 child care providers received training during the past year. In addition, 201 providers received training on Helping Children Resolve Conflict. There was a significant change in their knowledge and behavior at ($p < .05$) on seven objectives tested with the greatest changes being in understanding the pitfalls to avoid when implementing the conflict resolution model and developed the ability to recognize the four types of aggression and use proper techniques for dealing with each. Other significant changes were reported in developing the ability to identify appropriate and inappropriate times when mediation is used with children and using the steps in the conflict mediation model.

- c) Scope of Impact - State Specific
- d) Funding
UNL Extension
Federal Formula Funds

Key Theme - Youth Development/4-H

(refers to Plan of Work Goals 2,3 & 5, Output Indicators 2 & 3, Outcome Indicators 3 & 4)

- a) The Nebraska 4-H Unicameral Youth Conference (UYC) was designed to help youth understand public policy and leadership that is needed to affect the political process of public policy making. Forty youth from across Nebraska participated in a legislative simulation that took a bill from its introduction in a committee hearing through final reading and voting. Senators, legislative aides, policy experts, lobbyists and governmental agency representatives coached the youth as they progressed through the hands-on experiential process.
- b) Participants gained basic understanding of civic life, politics and Nebraska government as well as an understanding of the relationship of American politics to world affairs. Participating youth completed pre and post-conference evaluations. They rated their understanding and participation on a five-point scale from no understanding to complete understanding on factors related to the conference. Their answers to the 12 questions showed they had a better understanding of the state legislative process and the influence citizens can have on the various issues after the UYC experience. 88% of the youth indicated an increased interest in exploring the possibility of a career in politics.
- c) Scope of Impact - State Specific
- d) Funding

Key Theme - Youth Development/4-H

(refers to Plan of Work Goals 2,3 & 5, Output Indicators 2 & 3, Outcome Indicators 3 & 4)

- a) In January 2005 the 4-H Youth-Adult Partnership team conducted a staff development program to prepare Extension staff to implement a youth-adult partnership program that would provide youth and adults with skills, knowledge, and experiences necessary to be effective partners in decision-making and governance in the community.

Seventy three youth and adults attended the training. During the 3 day program the participants: gained an understanding of the shared leadership concept; identified ways in which connections between youth and adults can positively affect the community; recognized the principles and practices of positive youth development and community youth development; gained a greater understanding about how youth can be effective leaders in the community; identified potential partners and resources in their community; developed a preliminary action plan to launch a youth-adult partnership short or long term project; and were prepared to train youth for community leadership roles.

Youth representing Hayes Center, Hartington, Stromsburg, Wakefield, Winnebago, Butler county and Thedford communities gave presentations on how they have been involved in their communities and their youth-adult partnership team accomplishments. Wendy Wheeler, President of the Innovation Center for Youth and Community Development was the key presenter for the program.

- b) At the training the participants were given an opportunity to apply for a Youth-Adult Partnership Mini-grant to develop a new program in their community. Ten communities were selected from 15 applications. Each community had 6 months to plan and complete their project. Seven of the ten projects accomplished their goals. The three that did not complete their project was the result of staffing changes in two instances and lack of community support in the third community.

In all seven communities' youth and adults were involved together to develop a program or project goals and strategies to achieve their goals. This was a challenge because they only had 5 months to plan and carry out their plans. The projects varied from renovating a city park to organizing summer activities for youth. One community organized a youth-adult community coalition to address the needs of youth in the community.

In all of the projects the youth and adults experienced the following:

- Ideas of youth and adults were respected and listened to
- Youth improved their leadership skills
- Youth and adults assumed leadership roles
- Adults opened their eyes to the abilities of youth
- Adults gained a better understanding of the value of youth involvement
- Youth gained communication skills
- Youth became more knowledgeable about community issues

- c) Scope of Impact - State Specific

- d) Funding
UNL Extension
Federal Formula Funds

Key Theme - Youth Development/4-H

(refers to Plan of Work Goals 1,3 & 5, Output Indicators 1 & 3, Outcome Indicators 1 & 2)

a, b) Out of School - Education for children/youth during at risk hours.

The *Hours of Opportunity Conference* was held May 18 & 19 at Gretna Nebraska. There were over 100 people in attendance. Twenty-six workshop sessions were included in the educational program and twenty-four different organizations were represented. As a result of the positive feedback from the conference attendees there are other organizations and agencies who contacted us to be members of the planning team for the 2005 conference. This opportunity to share resources and partner has been of value for 4-H as we go forward with programs to support youth in out of school educational settings. This is an opportunity to make others aware of the research based curricula available through the 4-H program. The 2005 dates have been set for May 10 & 11.

Cyfar grant

- Platte Co. - Increased to 3 elementary schools conducting 4-H After-school programs
- Madison Co. - Conducted Out-of-School programs with families to incorporate a multi cultural focus.

c) Scope of Impact - State Specific

d) Funding

UNL Extension
Federal Formula Funds

Key Theme - Youth Development/4-H

(refers to Plan of Work Goals 2 & 3, Output Indicators 2 & 3, Outcome Indicators 2 & 3)

a) 4-H Military

The children of America's servicemen and women also make sacrifices for our nation. Their families go through permanent changes in station (PCS), which result in the youth moving often and going through the transitions of new schools, leaving friends, etc. The United States Army and Air Force have established a partnership with the United States Department of Agriculture, to establish 4-H clubs on installations and bases across the world to help ease those transitions. University of Nebraska-Lincoln Extension 4-H has helped children with parents stationed at Offutt Air Force Base near Omaha learn life skills and foster friendships to deal successfully with their unique challenges. The youth participate in 4-H activities, both on and off the Base. The existence of a 4-H program provides continuity for youth arriving from other bases and for youth who leave Offutt and arrive at new homes.

b) Over 150 youth from Offutt Youth Center were enrolled in 4-H in Douglas/Sarpy during 2005. Those youth participated in 4-H activities and completed 4-H projects such as cooking, home environment, woodworking, and aerospace. Approximately 40 of those youth also participated in a variety of 4-H learning experiences during the summer months. Evaluation of the program revealed:

- 75% of the youth participating recognize 4-H as a fun and challenging activity, none of the youth knew of 4-H prior to the programs inception.
- A mean score of 8.18 (10-point scale) was given when youth were asked to reflect upon their learning as a result of participation in 4-H activities.
- 44% attribute their participation in 4-H directly to the learning of new skills.
 - 33% listed project skills

- 33% 33% listed self-reliance
- 27% listed teamwork
- 33% 13% listed challenging one's self
- 33% 13% listed the ability to teach others
- 33% 75% said they will seek out a 4-H program in their new home following a PCS.

c) Scope of Impact - State Specific

d) Funding
UNL Extension
Federal Formula Funds
USDA Military 4-H Club Grants

Key Theme - Youth Development/4-H

(refers to Plan of Work Goals 3, 4 & 7, Output Indicator 3, Outcome Indicators 3 & 8)

a) In today's high-tech world, gaining technical knowledge can give students a leg up. And small towns are hungry for help with technical challenges.

University of Nebraska–Lincoln Extension 4-H in 1999 started the Tech Team for high school students who want to learn about technology and share their knowledge to help others. About 50 students have participated. Once a year the university's Rural Initiative and 4-H sponsor a weekend workshop for high school students which expands their tech skills and teaches them to share those skills to promote rural economic and community development. As a result, the team members are volunteering to help their communities in a variety of ways.

b) Students are learning marketable skills while Nebraska towns are tapping their expertise for community enhancement. Some students have been able to take leadership positions in their schools and counties. One member said she used the knowledge gained through the tech team to teach members of her community. She organized and taught an Internet class to senior citizens and also used her skills to promote 4-H and the use of technology in her area.

c) Scope of Impact - State Specific

d) Funding
UNL Extension
Federal Formula Funds

B. STAKEHOLDER INPUT PROCESS

A. Actions taken to seek stakeholder input

The six Action Plan teams of Nebraska–Lincoln Extension are required to seek program input from a minimum of five key stakeholders annually (determined to represent a significant population, organization or be a key political leader). This stakeholder input is achieved in a variety of ways including face-to-face meetings and telephone or written surveys. In addition, a number of advisory committees associated with University of Nebraska Departments and Research and Extension Centers provide excellent input to both our Extension programming and the research projects of the Agricultural Research Division.

Action teams when meeting with stakeholders are requested to seek the following information:

1. Are the educational goals of this action plan of the highest priority?
2. Does the action plan represent work which is complementary, but not duplicative, of work of educational entities?
3. Are there potential collaborators for these educational goals of action plans?
4. Are you as stakeholder aware of potential sources of grant/contract funding?
5. Are there educational goals of this action plan that should be targeted for elimination or hand-off to other entities?

Another key part of University of Nebraska–Lincoln Extension’s stakeholder input process in 2005 was participation in the Institute of Agriculture and Natural Resources (IANR) strategic planning input process. UNL Extension as a division of IANR had representatives present, and received resulting data, from the listening sessions held in 2005. Feedback from these listening sessions was shared with the action plan teams of UNL Extension.

Our institution considers itself fortunate that faculty (Specialists, Educators and Researchers) are engaged in one-on-one working relationships with many of the governmental, educational and business leaders of the state. This engagement provides access to information about trends and issues that impact Nebraska citizens.

B. Brief statement of the process used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them.

Several venues are used to identify individuals and groups who give input to the programming process:

- It is the responsibility of the teams to identify at least five external stakeholders that are familiar with the subject matter and the related issues impacting residents of the state. Generally these stakeholders are representatives of organizations/agencies that partner with UNL Extension. Stakeholders represent over eighty different agencies/organizations with whom Extension works. As an example of input received, the Community Resource Development action team shared the following:
 - Almost all (92%) of the stakeholders indicated they were familiar with the Action Team’s programming. They were most familiar with the Nebraska EDGE, Rural News Bits, the Nebraska Rural Institute, Nebraska Rural Poll, Nebraska Electronic Main Street, Master Navigator, and Real Colors. These comments show that the action team’s efforts are being noticed and appreciated. However, some of the programs are not as recognizable as others. We need to work on marketing all of the programs.

- When asked if the objectives of the action team represent work which is complementary of, but does not duplicate, work of other educational entities, all but two stakeholders agreed with that assessment. One respondent clarified their answer, “Maybe would be a better choice. There is some overlap when you are discussing programs but there are not enough service providers in any of the agencies or entities to cover the entire state so I think of us all as complementary.”
- The stakeholders were asked the two or three most pressing concerns that their community is currently facing. Some of the items listed include: lack of young people, retention of existing businesses, lack of funding, depopulation, lack of leadership capacity, lack of higher paying full-time jobs, loss of participants in community groups, poor participation in community groups, strengthening the business core, promoting orderly growth, school consolidation, property tax issues, community vision, and wealth retention.
- For each of the IANR listening sessions the host Extension Educators were asked to identify key stakeholders in their communities to be invited to the listening session. In addition, many of the listening sessions issued a general invitation to the public to attend.
- Representatives from commodity groups, the green industry, and related industrial entities are part of the advisory committees of departments of the Institute of Agriculture and Natural Resources. These advisory groups provide input to the departmental and extension/research programmatic goals.
- UNL Extension Action Plans and departmental action plans are compared to insure congruence. This happens through group discussions between departmental and extension/research administrators, and departmental administrative attendance as a part of the Extension Action Plan team meetings. Extension Action Plan team meetings held in the fall, 2005, included research/extension faculty and department heads in planning meetings for 2005. Additionally several of the Action Plan teams hold regular communication through telephone bridge calls or face to face meetings.

C. How collected input was analyzed

Meetings and reports submitted by the Extension Action Plan teams indicate that while their goals are generally seen by stakeholders as in alignment with the needs of Nebraskans, modifications need to be ongoing to insure that the Plan of Work goals are positioned to have Extension partner with other educational entities. The general tone of stakeholder reviewers is that the educational goals of Action Plan teams are focused on high priority issues. Encouragement from stakeholders to not duplicate, but partner with other educational entities remains a key item as does the need to market and promote educational efforts that are undertaken.

Additional themes that remain consistent are:

- UNL Extension needs to be able to respond more rapidly
- Bring other partners to the ‘table’ for planning and implementation
- Get better acquainted with other entities delivering education in various program areas
- Continue to utilize technology for program delivery
- Market your programs more widely

D. Is the Stakeholder Input Process Useful

UNL Extension believes that stakeholder input is essential to the implementation and delivery of educational programs that are on target. Through the involvement of stakeholders:

- UNL Extension programs are better marketed across the state
- Co-sponsorship of programs with other entities becomes more likely as others learn about programs
- Collaborating entities become program participants
- Collaborating entities become sources of matching funds to deliver educational programs

The IANR listening sessions continue to be helpful in identifying priority issues to be incorporated into educational programs. Throughout all the listening sessions held in 2004 and 2005 the issues of highest priority for educational programming are economic development community vitality and water (quality and quantity).

C. PROGRAM REVIEW PROCESS

During 2003 the existing eleven action teams merged their educational goals into six action teams. These six action teams and work groups within each action plan are required to update their plans on an annual basis using the input of stakeholders and the evaluation results from programs delivered.

D. EVALUATION OF THE SUCCESS OF MULTI AND JOINT ACTIVITIES

A. Did the planned programs address the critical issues of strategic importance, including those identified by the stakeholders

Input received from over 80 entities who were involved in a review of action team plans and the over 700 participating involved in the IANR listening sessions verify that the critical issues impacting Nebraskans are being addressed. Nebraska uses a “continuous listening” process for its planning effort. This system insures that the plan of work is reviewed and updated regularly. The accuracy of the action plans is verified by:

- Action teams meet face to face at least twice annually
- Several action teams use monthly phone bridge calls to insure that they are on track
- Action team leaders dialogue with subject matter department administrators annually to insure that the goals of the action teams are in congruence with research and extension goals of the University departments
- Action teams meet with their stakeholders
- Action teams refine programs to be delivered to insure that content goals support needs identified by stakeholders and demographic trends.

B. Did the planned programs address the needs of under-served and under-represented populations of the state

Below are examples of programs initiated through input of stakeholders to address needs of under-served and under-represented populations.

- University of Nebraska–Lincoln Extension has built a strong partnership with Little Priest Tribal College and Nebraska Indian Community College. Because of these partnerships teens have gotten more involved in outside activities and are interacting with other youth and adults outside their schools. Program leaders say teens are more motivated and more interested in learning about activities.
- An Extension Assistant in Dawson county worked with hispanic youth as a target effort to increase hispanic youth participation. The goals for the group included developing leadership skills, providing activities for Hispanic teens to participate in, and to become more involved in the community.
- The Preventive Health and Wellness Education action team exemplifies the work that is being done to impact under-served and under-represented populations. Through input from Department of Health and Human Services stakeholders, who are case managers for welfare to work families, a program was implemented in 1999 to educate welfare to work families, primarily single mothers. This welfare to work program, called Building Nebraska Families (BNF), works one-on-one with the most difficult of the families moving off of the welfare roles. Eleven FTE of Extension Educators have been hired through a contract with the Nebraska Department of Health and Human Services to work with these families. BNF is being studied by Mathematica as best addressing the needs of welfare to work families. The request of Mathematica is to continue this study through 2007 insuring long-term data. Program graduates say that, thanks to the program, they feel better about themselves, improved their time management and problem solving skills and are able to earn more money at their jobs.
- Four colleges and universities (including UNL Extension) and seven public school districts joined forces to increase the number of minority, bilingual, and English as a Second Language (ESL) endorsed teachers in northeast Nebraska using collaboration and a distance delivered undergraduate degree program.

C. Did the planned programs describe the expected outcomes and impacts

Goals identified in the plan of work submitted in 2000 which includes output and outcome indicators, as well as proposed impacts, are used as planning tools. The action teams collect impact data based upon the indicators identified. Some of the action teams are embarking on a process to collect this data through their web sites. It is generally felt that planned programs addressed the expected outcomes. Action teams are growing in their ability to use technology and teaching tools though learning web sites that are available 24-7, i.e. <http://lancaster.unl.edu/food/>, <http://beef.unl.edu/>. Polycoms and WebEx is also being utilized as teaching mediums.

D. Did the planned programs result in improved program effectiveness and/or efficiency

Documentation of program impacts reinforce the effectiveness of UNL Extension programs. Several impact reports (Connect and Connections) developed for stakeholders are included with this document to substantiate the difference that Extension programs are making.

Efficiency is seen in the increasing number of multi-action team, multi-department and multi-state educational programs that are being delivered. Efficiency is exhibited by the Educators and Specialists as they continually work to develop programs that can be delivered in multiple sites, using multi mediums. The aggressive efforts of faculty to use electronic media to deliver educational programs is helping achieve efficiency, but more importantly is allowing program clientele to participate in programming on their own time and in their own space. An output of the new focused education concept is in the increase in relationships with departments and

colleges external to traditional extension partners: i.e. College of Architecture, College of Fine and Performing Arts, Admissions, Journalism and Computer Science.

**U.S. Department of Agriculture
 Cooperative State Research, Education, and Extension Service
 Supplement to the Annual Report of Accomplishments and Results
 Actual Expenditures of Federal Funding for Multistate Extension Activities and Integrated Activities
 (Attach Brief Summaries)
 Fiscal Year: 2005**

Select One: Interim Final

Institution: University of Nebraska-Lincoln Extension and Ag Experiment Station

State: Nebraska

	Integrated Activities (Hatch)		Multistate Extension Activities (Smith-Lever)		Integrated Activities (Smith-Lever)	
<i>Established Target %</i>	25	%	25	%	25	%
<i>This FY Allocation (from 1088)</i>	\$3,161,109		\$4,844,339		\$4,844,339	
<i>This FY Target Amount</i>	\$790,277		\$1,211,085		\$1,211,085	
Title of Planned Program Activity						
Goal 1: Integrated Crop Management Integrated Livestock Systems Management Sustainable Agricultural Production Systems	\$620,474		\$433,473		\$569,274	
Goal 2: Food Processing and Food Service Management Food Safety	\$69,092		\$52,135		\$71,107	
Goal 3: Human Nutrition, Health and Safety	\$3,253		\$43,688		\$22,161	
Goal 4: Natural Resource Management and Protection Environmental Protection Environmental and Natural Resources Policy	\$271,358		\$469,617		\$417,137	
Goal 5: Family Strengths	\$31,448		\$226,503		\$134,480	
Total	\$995,625		\$1,225,416		\$1,214,159	
Carryover						

Certification: I certify to the best of my knowledge and belief that this report is correct and complete and that all outlays represented here accurately reflect allowable expenditures of Federal funds only in satisfying AREERA requirements.

Dr. Elbert C. Dickey March 31, 2006
 _____ **Director of University of Nebraska-Lincoln Extension** _____ **Date**

Dr. Gary L. Cunningham March 31, 2006
 _____ **Director of University of Nebraska-Lincoln Ag Experiment Station** _____ **Date**

E. MULTISTATE EXTENSION ACTIVITIES

Goal 1

Most of the multistate activities outlined in the Plan of Work to support the Integrated Crop Management, Integrated Livestock Systems Management, Integrated Pest Management, and Sustainable Agricultural Production Systems are continuing. Some highlights include:

- Cropping systems program coordination among Extension faculty in Kansas, Nebraska, South Dakota, and North Dakota. A joint inservice training was conducted in 2004 and 2005.
- New methods and technologies to control and improve reproductive success in beef cattle were the focus of the University of Nebraska–Lincoln Extension's "Applied Reproductive Strategies in Beef Cattle Symposium" held in 2005 in North Platte, NE. This program was organized as an educational opportunity to help people in the beef industry gain a greater understanding of the reproductive processes involved in both female and male beef cattle and provide management strategies to optimize reproductive efficiency. There were 22 states that attended and Colorado State University and the University of Illinois are using the lectures on the web as part of their advanced reproduction classes.
- The four state commercial horticultural workshop continues to be held at St. Joseph, MO for producers in Nebraska, Kansas, Iowa, and Missouri.
- The 2005 Central Plains Irrigation Shortcourse was hosted by Nebraska, Kansas and Colorado State University.
- Nebraska continues to provide leadership for the Livestock and Poultry Environmental Stewardship curriculum project. Fifteen states are involved in this national education program. The program team has provided training since 2001 for state teams.
- The 21st annual Four State Beef Conference was held in 2005. Nebraska, Missouri, Kansas, and Iowa cooperate to plan, conduct and host this event.
- Nebraska has taken on a leadership role for the Five State Dairy conference since 2002 with support from Illinois, Iowa, Minnesota, North and South Dakota.
- Nebraska has been instrumental in the planning for Integrating Forage and Livestock workshops with Illinois, Iowa, Indiana, Kansas, Missouri, North and South Dakota, and Ohio.
- Nebraska continues to provide leadership for a Four State Sugarbeet-Bean Group consisting of teams from Colorado, Montana, Nebraska and Wyoming.
- Nebraska has served as the host institution for the North Central Sustainable Agriculture Research and Education (SARE) program. The interaction among the twelve North Central states' extension programs in carrying out the SARE Professional Development Program adds value to each of the individual state programs.

Goal 2

Most of the multi-state activities outlined in the Plan of Work to support the Pre and Post Harvest Plant and Animal Food Safety, Food Processing and Food Service Management are continuing.

Some highlights include:

- Nebraska continues to provide leadership in HACCP and Food Safety programming by developing videos for use in meat processing facilities to train employees. English, Spanish, Korean, Vietnamese and Chinese versions were produced and distributed to all small meat processors in the United States.
- Cooperation since 1993 between Kansas and Nebraska Food Safety faculty members has delivered workshops to Kansas and Nebraska Processors. A special emphasis has been placed on providing low cost workshops for small and very small meat and poultry operations (less than 500 employees.) To meet this need, UNL Extension recently organized a team of faculty at Nebraska and Kansas State to obtain funding to expand

- HACCP training and to include UNL Extension in Missouri and South Dakota in these programming efforts.
- Nebraska has been instrumental in inservice education of consumer food safety and food irradiation along with Arkansas, California, Florida, Kansas, Minnesota, Pennsylvania and Texas.

Goal 3

Most of the multi-state activities outlined in the Plan of Work to support the Human Nutrition, Health and Safety and Health Care are continuing. Some highlights include:

- Extension specialists working in air quality have developed and maintained a multi state program between Kansas State and Nebraska.
- In service education for Nebraska, Kansas, South Dakota and North Dakota have focused on learning skills for evaluation of programs. Approximately twenty-five Extension faculty members participated in an annual inservice education program sharing skills and program resources.
- An Extension specialist serves as editor of the ten states mountain region for the development and distribution of an annual report for the Food Stamp Nutrition Education program.

Goal 4

Many environmental issues are not state specific and require that educational programs be multi state based. Nebraska continues to be active in multi state programming. Some key examples are:

- The atrazine education program in the Blue River Basin of Nebraska and Kansas is continuing. The upper Blue River Basin is in Nebraska and the drainage flows into Kansas. Atrazine levels in the lower basin are an issue because the water is used for drinking water supplies. Kansas State University and the University of Nebraska continue joint research and extension programs to address the issue. Inservice education has been provided for extension educators and workshops and tours targeting producers have been conducted.
- The University of Nebraska, University of Missouri, Kansas State University, and Iowa State University cooperated to prepare a proposal to CSREES to continue the regional water quality coordination project in 2005.
- Nebraska has taken the lead in drought mitigation education working with Colorado and Wyoming.
- The 11th annual North Platte River Basin Water Policy Conference was held in 2005 in Wyoming. The conference was organized by the University of Nebraska and co-sponsored by the University of Wyoming and irrigation districts in Nebraska and Wyoming. The conference has continued to address issues associated with the Platte River UNL Agreement proposals. Key issues are water supply and critical habitat for endangered species.
- The "Prevention and Control of Wildlife" handbook was edited by faculty members from the University of Nebraska and University of California and a USDA-APHIS staff member. The handbook continues to be used as a major resource to address wildlife damage management throughout the United States, Canada, Mexico and other countries.
- With the issue of prairie dog infestations across the country the Interagency Prairie Dog Coordinating Committee has been conducting inservice training, presentations and producing publications and guides. Committee members represent Arizona, Colorado, Kansas, Montana, Nebraska, North and South Dakota, New Mexico, Oklahoma, Texas and Utah.
- Four states (Iowa, Nebraska, North and South Dakota) are involved with enhancing natural resources education for Tribal Colleges. You will see this effort increasing over the next few years.

- Nebraska hosted the 8th Annual Winery and Grape Growers Forum partnering with Colorado, Illinois, Iowa, Kansas, Missouri, South Dakota, Wisconsin and Wyoming.

Goal 5

Most of the multi-state activities outlined in the Plan of Work to support Family Strengths, Family Housing, Telecommunications for Rural Areas and Community Strengths are continuing. Some highlights include:

- An Extension housing program including Nebraska, Kansas and Iowa is focused on helping clientele receive immediate responses to housing questions. A 800 number telephone response program is organized by Extension faculty in these states to save time answering questions.
- Efforts began in 2000 on the Initiative for Future Agriculture and Food Systems project titled “North Central Initiative for Small Farm Profitability.” This effort conducted research and education aimed at improving the profitability and competitiveness of small and mid-sized farms and ranches. Producer clusters were formed in the participating states of Nebraska, Iowa, Missouri, and Wisconsin to put research results into action in the cluster communities. This project was completed in 2005.
- An Extension faculty member serves as a member of the leadership team for the North Central Extension Leadership Development program.
- The NxLevel course, “Tilling the Soil of Opportunity,” was introduced in 2000 as a curriculum for agriculturally based entrepreneurs. The curriculum is specifically designed for the producer searching for innovative ideas and enhance marketing opportunities. Direction for the development of the curriculum was provided by the University of Nebraska’s Center for Applied Rural Innovation and the University of Colorado at Denver’s Colorado Center for Community Development. Inservice training for faculty in interested states started in 2000 and continues through 2005.
- UNL Extension continues to partner with the University of Nebraska State Museum to develop the Wonderwise 4-H project, a series of informal science education modules that focus on bringing engaging science activities to youth, especially those in rural communities. The project were piloted in eleven states (Nebraska, Kansas, Oklahoma, Wyoming, Montana, North Dakota, South Dakota, Michigan, Minnesota, Illinois, and Iowa) reaching an out-of-school audience of over 284,000 youth enrolled in 4-H camps, clubs, and special programs. The goals of the Wonderwise 4-H project are 1) To motivate 8- to 12-year old youth, particularly girls, to pursue an interest in and awareness of scientific activities and careers, 2) To create a positive image of women and minority scientists for youth participating in 4-H, 3) To improve the diversity and quality of 4-H’s out-of-school science materials by offering materials that are inquiry-based, multicultural, and tie science activities to the work of real scientists, 4) To help youth make connections between agricultural topics and their underlying scientific principles, and 5) To instill in youth a better appreciation of empirically-based knowledge and enhance children’s ability to use scientific reasoning. Each Wonderwise 4-H project module focuses on one woman scientist and one science topic, and includes an activity book package, a video, and a CD-ROM. The next partnership will be on evolution.
- In a unique coordinating effort between Nebraska, New Mexico, North Carolina, and Minnesota youth from around the country can participate in a virtual 4-H camping experience through goCybercamp.org. This adventure allows youth from all 50 states to participate in various 4-H camp activities right from their own home or school, meet new friends, share a virtual cabin and project interests while learning about nature, natural resources, nutrition, safety, along with many other camping experiences.

F. INTEGRATED RESEARCH AND EXTENSION ACTIVITIES

Below are a few examples of integrated Research and Extension activities.

Goal 1

Activity: Integrated Crop Management

Topic: Organic Farming Project

Issue: Organic farming is one of the fastest growing segments of U.S. agriculture. In Nebraska, certified organic crop and pasture acreage nearly doubled from 1997 to 2003, according to the U.S. Department of Agriculture. To capitalize on this expanding market, the state's farmers need practical, science-based information about growing food organically under Nebraska conditions.

What has been done: The University of Nebraska-Lincoln in 2005 initiated a project to expand organic farming research and education, enhance collaborations with growers and develop science-based information for organic food production. As part of a \$750,000 grant, Institute of Agriculture and Natural Resources researchers will establish the university's first certified organic research plots at four research farms around the state where scientists can study locally important organic production issues. Scientists will work closely with organic farmers. Advisory committees of organic producers are helping to guide research and scientists will conduct studies on cooperating certified organic farms. Education is a key part of this project. A UNL Extension educator will coordinate the project and plan how best to share findings and organic concepts with farmers and students. The overall aim is to incorporate organic farming concepts into IANR's extension, research and teaching.

Impact: This research and education effort is laying the foundation to help the university meet the increasing need for practical, science-based information about organic farming in Nebraska. Establishing certified organic test plots will take three years but will make possible long-term research on organic systems and allow researchers to provide localized information for producers.

Summary: Organic farming is one of the fastest growing segments of U.S. agriculture. A new IANR research and extension project is laying the foundation to expand organic farming research and education, enhance collaborations with growers and develop science-based information for organic food production in Nebraska. As part of a \$750,000 USDA-CSREES grant, the team is establishing the university's first certified organic research plots at four research farms around the state where scientists will study locally important organic farming issues. They'll also work closely with the state's organic growers, including conducting studies on certified organic farms. Education is a key part of this project. This research and education effort is laying the foundation that will enable the university to meet the increasing need for practical, science-based research and education about organic farming in Nebraska.

Funding:

UNL Agricultural Research Division

UNL Extension

USDA Cooperative State Research, Education and Extension Service

Activity: Integrated Livestock Systems Management

Topic: Feedlot Heat Stress Research

Issue: Still, sweltering, sticky summer days can be deadly for feedlot cattle. Reducing cattle deaths and performance losses from severe heat and humidity is important to feedlot profitability.

What has been done: Research over the past decade by University of Nebraska-Lincoln animal scientists at the Northeast Research and Extension Center greatly expanded understanding of the nature of heat waves and their effects on cattle. Based on these findings, researchers developed management tools feedlot operators can use to reduce heat stress in cattle. An extensive UNL Extension education effort helped producers implement these preventive measures. Feedlot cattle deaths steadily declined during the most severe heat waves of 1995, 1999 and 2005 in northeast Nebraska and northwest Iowa – the period during which these management techniques were introduced.

Impact: Implementation of UNL's heat stress reduction strategies is saving the region's cattle industry millions annually in cattle deaths and performance losses. In the 2005 heat wave alone, widespread adoption of these strategies saved the region's cattle industry between \$10 million and \$27 million. That estimate is based on the heat waves' severity and the number of cattle on feed at the time.

Summary: Widespread adoption of IANR-developed strategies for reducing heat stress in feedlot cattle is saving the region's cattle industry millions annually in cattle deaths and performance losses. In the past decade, research by UNL animal scientists at the university's Northeast Research and Extension Center greatly expanded understanding of the nature of heat waves and their impact on cattle. Researchers developed management tools to reduce heat stress in cattle; an extensive UNL Extension education effort helped producers adopt these preventive measures. An economic analysis showed a steady decline in cattle deaths during three severe heat waves since 1995. In the 2005 heat wave alone, it's estimated that widespread use of these tools saved the region's cattle industry between \$10 million and \$27 million in death and performance losses.

Funding:

UNL Agricultural Research Division
UNL Extension
USDA National Research Initiative

Activity: Sustainable Agricultural Production Systems

Topic: Sunflower Production Boosts Producer Income

Issue: Sunflowers can help Panhandle farmers diversify, control pests and disease, spread production risks and make the most of limited water. Strong prices boosted interest in sunflower production in 2005 and increased the need for timely science-based information.

What has been done: University of Nebraska-Lincoln Extension responded quickly to this increased demand for information from first-time and established growers by offering educational programs based on ongoing research at the Panhandle Research and Extension Center. High demand for confection sunflower and sunflower oil had pushed up prices and continued drought left producers seeking crops that need less irrigation water than corn. Extension provided information on producing sunflowers, individual site visits and discussions with new growers as part of a first-time grower mentoring program. Extension also offered sunflower tours and incorporated sunflower information into annual crop production meetings. Extension was able to respond quickly thanks to ongoing sunflower studies by UNL researchers in the Panhandle. Over the years, this research has provided information on how best to produce sunflowers in the region and helped increase sunflower acreage.

Impact: These timely educational efforts helped the region's growers capitalize on strong sunflower

prices. Panhandle sunflower production jumped nearly 170 percent in 2005 from 2004 to 89,000 acres. Much of the crop was grown on limited irrigation acres, thanks in part to extension information. The region's gross income from sunflowers in 2005 was about \$17 million, about triple the 2000-2004 average.

Summary: Strong prices and continued drought in 2005 boosted Panhandle farmers' interest in growing sunflowers. UNL Extension met the increased demand for science-based production information through educational programs for established and first-time growers. Extension provided growers information on producing sunflowers, including tours, meetings and a first-time grower mentoring program. Extension was able to respond quickly thanks to ongoing sunflower studies by UNL researchers in the Panhandle. These timely educational efforts helped the region's growers capitalize on strong sunflower prices. Panhandle sunflower production jumped nearly 170 percent in 2005 from 2004 to 89,000 acres. Much of the crop was grown on limited irrigation acres, thanks in part to extension information. The region's gross income from sunflowers in 2005 was about \$17 million, about triple the 2000-2004 average.

Funding:

UNL Agricultural Research Division

UNL Extension

USDA-Sustainable Agriculture Research and Education

Goal 2

Activity: **Food Processing and Food Service Management of Food Safety**

Topic: **Research Aids Labeling Decisions**

Issue: For most people, food labels provide helpful nutritional information. For people with food allergies, accurate labels can be a matter of life and death.

What has been done: An international study by University of Nebraska-Lincoln food scientists found that highly refined soybean oil does not trigger reactions in soy-sensitive people. Refined soy oil is commonly used in foods worldwide. Findings don't apply to cold-pressed soy oil, which has higher levels of protein, or allergens, that may present a risk to soy-allergic consumers and should be labeled. These UNL Food Allergy Research and Resource Program scientists shared their findings internationally with policymakers, congressional staffers, industry, farmers and consumers.

Impact: The UNL findings provided scientific evidence for European Union food allergen labeling decisions in 2005 and the U.S. Food Allergen Labeling and Consumer Protection Act of 2004. The EU temporarily exempted highly refined soy oil from food allergen labeling regulations. Earlier, U.S. regulators exempted highly refined vegetable oils derived from known allergens, such as soybeans or peanuts, from the federal food allergen labeling law that took effect this year. These decisions helped preserve farmers' widest possible access to world markets and expanded the types of foods soy-allergic people know they can safely consume.

Summary: UNL soybean oil research is influencing food allergen labeling laws here and abroad. An international study by IANR food scientists confirmed that highly refined soybean oil does not cause reactions in people who are allergic to soybeans. Scientists shared the Food Allergy Research and Resource Program study results internationally. Their findings played a role in European Union food allergen labeling decisions in 2005 and the U.S. Food Allergen Labeling and Consumer Protection Act of 2004. These decisions helped preserve soybean growers' widest possible access to world markets. Results

assure soy-allergic consumers that they can safely eat a wider range of processed foods if they contain only refined soy oil.

Funding:

UNL Agricultural Research Division
UNL Extension
United Soybean board
Private food companies

Goal 3

Activity: **Human Nutrition, Health and Safety**

Topic: Food Allergen Tests

Issue: Consumers with food allergies and food processing companies both want to be sure that traces of food allergens don't unintentionally end up in foods where they are not a labeled ingredient. For people with food allergies, such cross-contamination can result in potentially life-threatening reactions.

What has been done:

University of Nebraska-Lincoln food scientists are leaders in developing tests that allow companies to rapidly, accurately detect minute traces of an allergenic food on equipment or in foods processed on shared equipment. In 2005, the team's new test for soy flour became commercially available. The team earlier developed tests for peanuts, milk, eggs, almonds and wheat gluten. A test for hazelnuts could be commercialized in 2006. All these tests are commercially available to the food industry through a university licensing agreement with Neogen, a Michigan company.

Impact:

Soy, milk, eggs, peanuts, tree nuts and wheat are among the eight common foods responsible for all food allergic reactions so developing rapid tests for these foods is helping industry address some cross-contamination concerns. Widespread industry use of these UNL-developed tests has helped industry make foods safer for people with food allergies.

Summary:

The food industry is using tests developed by UNL food scientists to protect allergic consumers by ensuring their products contain only the intended ingredients. These tests allow companies to rapidly detect traces of a specific allergenic food on equipment or in foods processed on shared equipment. That's important because even a small amount of an allergenic food can cause serious reactions in people who are sensitive to that food. In 2005, the team's test for soy flour became commercially available. Researchers earlier devised tests for peanuts, milk, eggs, almonds and wheat gluten. The tests are commercially available to industry through a university licensing agreement with Neogen, a Michigan company. Widespread industry use of these UNL-developed tests is helping food manufacturers make their foods safer for people with food allergies.

Funding:

UNL Agricultural Research Division
UNL Extension
UNL Food Allergy Research and Resource Program member companies
USDA

Goal 4

Activity: **Natural Resources Management and Protection**

Topic: **Water Optimizer**

Issue: Nebraska irrigators facing water shortages must make difficult and complex choices about how best to use limited water.

What has been done: An agricultural economist and a biological systems engineer at the University of Nebraska-Lincoln developed the Water Optimizer. This decision-support computer program became available in 2005 to help farmers make better-informed cropping choices such as determining whether it would be most profitable to grow different crops, irrigate fewer acres, apply less water to existing crops or go to dryland farming. Growers load information about their operation such as the amount of water available, soil type, irrigation system type and fuel type for irrigation. They also enter production costs, irrigation costs, crop prices and crop type. The Water Optimizer is available on the Web at <http://extension-water.unl.edu/> or on a DVD/CD set and was promoted at dozens of UNL Extension meetings in 2005.

Impact: This Institute of Agriculture and Natural Resources-developed tool is helping Nebraska farmers make more informed choices that conserve water and producer profits. Nearly 700 users downloaded or purchased the tool in 2005.

Summary: Nebraska irrigators facing water shortages have a new tool to help them make difficult and complex choices about how best to use their limited water supplies. The Water Optimizer, a decision-support computer program developed by IANR researchers, became available in 2005 to help farmers make more informed choices that conserve water and producer profits. Nearly 700 producers downloaded or purchased the tool in 2005. It lets users enter individualized information and calculate what crops will be most profitable with the given costs and available water. By running "what if" scenarios, growers can see the best options for farming with limited water whether it be growing different crops, irrigating fewer acres, applying less water to existing crops or going to dryland farming.

Funding:

UNL Agricultural Research Division
UNL Extension

Activity: **Environmental Protection**

Topic: **Soybean Rust**

Issue: Soybean rust is a new major disease worry for growers nationwide. University of Nebraska-Lincoln plant pathologists are studying this threat and providing resources to ensure Nebraska farmers are ready to combat soybean rust if it strikes the state.

What has been done: Plant pathologists created a one-stop soybean rust resource Web site at <http://soybeanrust.unl.edu>. Extension teamed with the Nebraska Soybean Board to offer a toll-free phone line with recorded updates and management information, and specialists and extension educators developed publications with specifics farmers can use to prepare. UNL plant pathologists also conducted 13 field trials across Nebraska in 2005.

Impact: This Institute of Agriculture and Natural Resources research and extension effort and close collaboration with the Nebraska Soybean Board has helped growers learn about and prepare for this new disease. Research will provide practical, science-based information growers and companies will use to control rust under Nebraska conditions. Researchers will use preliminary results and future field trials to devise an integrated soybean rust management program for Nebraska growers.

Summary: Soybean rust is a new major disease worry for growers nationwide. UNL plant pathologists are working to ensure Nebraska farmers have the information and resources to combat soybean rust if it strikes the state. In 2005, plant pathologists created a one-stop soybean rust resource Web site at <http://soybeanrust.unl.edu>. Extension teamed with the Nebraska Soybean Board to offer a toll-free phone line with recorded updates and management information and specialist and extension educator developed publications with specifics farmers can use to prepare. Researchers conducted 13 field trials statewide. This IANR research and extension effort and close collaboration with the Nebraska Soybean Board has helped growers learn about and prepare for this new disease. Research findings will provide practical, science-based information growers and companies will use to control rust under Nebraska conditions.

Funding:

UNL Agricultural Research Division
UNL Extension
North Central Soybean Research Program
USDA Animal and Plant Health Inspection Service
Nebraska Soybean Board

Activity: **Environmental and Natural Resources Policy**

Topic: **Groundwater Level Monitoring**

Issue: Nebraska has some of the world's most abundant groundwater supplies, but groundwater levels have dropped in many areas in recent years. Natural resources managers, irrigators and policymakers need current information to better assess and manage this valuable resource.

What has been done: For 75 years, the University of Nebraska's groundwater monitoring program has annually recorded and published Nebraska groundwater level rises and declines. Today, the program uses early spring readings from more than 5,400 irrigation, domestic, observation and monitoring wells. Yearly changes and cumulative changes since irrigation development began are published as colored maps and are available online. In 2005, the program published a map depicting widespread groundwater level declines from 2000 to 2005, the period of the current drought. Through a partnership with USDA's Risk Management Agency, the program is placing satellite uplinks and associated technology on 52 rapid response wells. This new technology, which will be available on the Internet by fall 2007, will provide current well level readings online to anyone with a computer.

Impact: Annual and longer-term groundwater level information have long been used by decision makers and resource managers to set policies related to groundwater pumping and to make key decisions about how to use this resource. Recent drought coupled with recent water policy and legal decisions have increased the need for current groundwater information. The new rapid monitoring program will provide immediate snapshots of groundwater conditions across the state to aid growers and policymakers.

Summary: UNL water researchers are teaming with the USDA's Risk Management Agency to provide current groundwater levels across Nebraska via the Internet. For 75 years, the university has recorded levels in groundwater wells statewide and reported findings annually in publications to aid decisions about groundwater use, management and policy. Those color maps also are available online. Through the

new partnership, satellite uplink and computer equipment is being installed on 52 on the 5,400 wells monitored statewide to compile groundwater data. This will allow information about current levels to be shared immediately via the Web. Recent drought coupled with recent water policy and legal decisions have increased the need for more timely groundwater information. The new rapid monitoring program, which will be available on the Internet by fall 2007, will provide a real-time snapshot of groundwater status.

Funding:

UNL Agricultural Research Division
UNL Extension
USDA Risk Management Agency

Goal 5

Activity: **Family Strengths**

Topic: **Rural Women's Concerns**

Issue: The outcomes of public policy choices, including welfare reform, can be quite different in rural than in urban areas. Policy-makers sometimes lack information on those differences.

What has been done: As part of a national three-year study on welfare reform and rural women, University of Nebraska family scientists asked 42 rural women of all incomes about child care, transportation and medical services in their communities as well as their jobs, incomes, expenses and spending habits. They wanted to determine what concerns rural women share regardless of income as well as differences based on income. Rural women tend to worry most about transportation, access to medical services and limited child-care options regardless of income. For example, a lot of women must drive at least two hours to receive medical services. While 80 percent of women reported being employed, many go in and out of the work force due to transportation and child care. Future research will include more in-depth studies comparing Nebraska women to women in other states and the Nebraska survey has been expanded.

Impact: Child care, transportation and health care are just a few things rural women worry about regardless of income. Results of the College of Education and Human Sciences study will provide information about the impact and consequences of welfare reform on rural women as well as general economic information to help policy-makers assess rural impacts of future public policy decisions.

Summary: Child care, transportation and health care are just a few things rural women worry about, IANR research shows. As part of a national three-year study on welfare reform and rural women, College of Education and Human Sciences family scientists asked 42 rural women about child care, transportation and medical services as well as their jobs, incomes, expenses and spending habits. Research has been expanded and results will provide information about the impact and consequences of welfare reform on rural women. Findings also will offer general economic information to help policy-makers assess the rural impact of future policy decisions.

Funding:

UNL Agricultural Research Division
UNL Extension
UNL College of Education and Human Sciences
Hatch Act