

**Annual Report  
of  
Accomplishments & Results  
(2000)  
for  
Colorado '99-'04  
Plan of Work**

## A. State Programs

### Introduction

Colorado State University Cooperative Extension continues to organize its programs around six ongoing Program of Work Teams which include the following:

- Sustaining Agriculture and the Environment
- Engaging Communities in Transition
- Enhancing Families and Community
- Strengthening Youth Development
- Growing Horticulture in Colorado
- Improving Nutrition, Food Safety, and Health

Most of the ongoing programs described in this report fall under one of these six broad areas.

An analysis of state trends and a new process of stakeholder input lead us to four new Critical Issue Programming Teams:

- Addressing Growth Decisions
- Biotechnology
- Community Commitment to Families and Youth
- Workforce/Labor Force

In general, these Critical Issues Teams are comprised of state and county Extension faculty and University faculty without Extension appointments from a variety of disciplines. They are responding to current political and economic concerns and bring creative interdisciplinary work to bear on these issues. The ongoing Program of Work Teams tend to be dominated by a single discipline and represent our ongoing commitments to foundation areas in Extension.

For both ongoing Program of Work and Critical Issue Teams, specific Action Committees have been identified to move some programs, immediately, to citizens (See next page).

Another accomplishment of Colorado State University Cooperative Extension in the year 2000, is to put on-line the new electronic reporting system entitled, e-POWER. This system is organized around the major Plans of Work. Outcome indicators entered into this program will greatly facilitate the efficiency of reporting from both county and state faculty. By the reporting year, 2001, we will be able to utilize this electronic system for all of our data.

**Colorado State University Cooperative Extension  
On-Going Program Teams and Critical Issue Teams with Action Committees**

**On-Going Program Teams (POW Teams) & Action Committees:**

**Sustaining Agriculture and the Environment** .....Dennis Lamm and Tim Steffens

Action Committees:

Animal Emergency Preparedness ..... Tom McBride

Drought ..... Dennis Lamm and John Ortmann

Ag Profitability ..... Sue Hine and Dennis Kaan

**Engaging Communities in Transition** ..... Diana Laughlin and Sheila Knop

**Enhancing Families and Community** ..... Jan Carroll and Laurel Kubin

Action Committee:

Gerontology ..... Luann Boyer

**Strengthening Youth Development** ..... Sue Cummings

**Growing Horticulture in Colorado** ..... Steve Newman

Action Committee:

Partnering for Green Colorado ..... Jim Klett and Carl Wilson

Master Gardeners ..... David Whiting

**Improving Nutrition, Food Safety and Health** ..... Jennifer Anderson and Elena Serrano

Action Committees:

Food Safety and Quality ..... Pat Kendall

Food Security ..... Karen Wilken

Health Promotion – Disease Prevention ..... Jennifer Anderson

**Critical Issue Teams & Action Committees:**

**Addressing Growth Decisions** ..... Andy Seidl and Lloyd Walker

Action Committees:

Natural Resources ..... Del Benson

Water ..... Reagan Waskom

Policy ..... Andy Seidl

Small Acreage ..... Ann Swinker and Bob Hamblen

**Biotechnology** ..... Pat Kendall and Paul Aravis

**Community Commitment to Families and Youth** ..... Dale Leidheiser and Cheryl Asmus

**Workforce/Labor Force** ..... Judy McKenna and Dawn Thilmany

## ***GOAL I: An agricultural system that is highly competitive in a global economy.***

*Issue: Despite its urban and suburban growth, Colorado still has a strong agriculture base but has an increasingly differentiated economy with strength in the tourism and technology-related industries. Unemployment is very low, resulting in labor shortages and problems with finding and maintaining qualified workers in agriculture. The depressed commodity prices and the international markets create new challenges for traditional producers. Current research shows only 10% of livestock producers and 40% of grain producers implement some risk management tools. These factors contribute to an increased need to emphasize management skills, in addition to production expertise in all Extension agricultural programs.*

### **Overview of Goal I for Program Year 2000**

During the program year 2000, Colorado has continued to experience steady population growth with continued loss of productive farm land and challenges in protecting agricultural land-based estates. The 2000 Census showed Colorado's population at 4.3 million. It has grown continuously for the last ten years at approximately twice the national average. Portions of the state that still identify agriculture as the primary industry are the Greeley area in Weld County, the eastern plains, and the San Luis Valley in the southern part of the state. Ranches and farms account for 49% of the land area in Colorado. This represents 29,500 farms or ranches with an average of 1,101 acres per ranch or farm.

Agriculture production land is being converted at one-half of one percent per year. The greatest conversion is along the Front Range where the highest pressure from growth is occurring. In the 2000 legislative session, there were numerous attempts to pass bills related to managing growth, but none succeeded. Therefore, in the November general election, a growth management initiative was on the public ballot. It was strongly opposed by the real estate community and a number of major business organizations and it failed. There are a number of ongoing efforts to preserve open-space, in order to protect view-scapes, a rural lifestyle, wildlife habitat, maintain municipal buffers, lower municipal infrastructure costs, automobile use and air pollution, etc. Approximately, 660,000 acres of Colorado private lands have been protected from residential or commercial development in cooperation with 37 local, state, and regional land trusts. The current governor has appointed a Commission on Saving Open-space, Farms and Ranches, and has held hearings and created a variety of services to support this effort. Some analysts have suggested that with 85% of the state's water owned by the agricultural community, water rights are farmer's and rancher's most valuable asset.

Currently, in Colorado, the average income from agriculture is the second lowest sector of the economy (next to the retail sector). In addition to the increasing pressure of growth and interest in conversion of agriculture lands, the changing structure of the agricultural industry, the affluence and segmentation of the consumer market, and international trade pressures create ongoing concerns for Colorado farmers and ranchers. It was increasingly clear in 2000 that producers who were interested in value-added and product differentiation efforts were more successful. These efforts require sophistication in business

planning and a clear knowledge of product, placement, price, and promotion of new agricultural products or services.

Large producers in Colorado were particularly vulnerable to the 2000 increase in fuel and energy costs expressed in higher prices for herbicides, fertilizers, and fuel. The increase in energy prices, coupled with a reduction in grain prices, caused a number of grain producers in areas where livestock feedlots were present to move from fertilizer use to manure use. Overall, production costs increased nearly 10% from 1999-2000 which is particularly difficult for small producers operating near the margin.

Colorado's potato industry had an excellent growing season, but this was echoed in all other potato growing regions of the country leading to low prices often \$1.00 - \$2.00 below production costs for a bag of potatoes. The Colorado potato industry experienced excellent quality, a slight reduction in acreage, and no evidence of late blight, which has been a critical problem in previous years.

Increasingly, the retail sector for potatoes is consolidating and demanding more service from producers. Those Colorado producers who are able to establish electronic conduits to big retailers and provide inventory management, specialty packaging, and designated quality controls will more likely remain in business.

Other vegetable production in Colorado continues to be impacted by the consolidation of the grocery retail system. Approximately 47,000 acres were planted in vegetables in 2000 with 50% of that committed to onions. Indications of consumer affluence and interest in fresh food is evidenced by an increased number of farmer's markets across the state where direct retail sales occur. The fruit industry is a small sector that is dominated by apples and is competing for productive land in the same areas of the state where there is high population growth. The Green Industry is the fastest growing sector of the agricultural community and currently accounts for approximately \$1.9 - 2.0 billion of gross sales annually. In 2000, 35,000-38,000 employees worked in the Colorado Green Industry. This agriculture sector is one part of the economy that reaps the benefits of our population growth from newcomers with abundant disposable income.

Cattle and hogs continue to account for the largest part of the agriculture gate and somewhat stronger cattle prices have released the pressure on those producers. However, environmental regulations and requirements for better nutrient management cause Colorado ranchers to be concerned about business decisions and new technologies. The total Colorado agricultural exports for 2000 equaled \$950 million with 41% of the total accounted for by meat and meat products. The Colorado Department of Agriculture has initiated a marketing relationship with China and has been encouraging visits to that market.

In light of the changing demographics of Colorado and the increased identification of the state as a chosen high-tech business location and a retirement destination, the pressures on agriculture will continue. These pressures are seen in land conversion interests, in the need for successful relationships between rural and urban interests and in the need for effective implementation of environmental standards. To these ends Colorado Cooperative Extension continues to emphasize business management skills, exploration of alternative and niche markets, and enhancement of precision agriculture. One blow to our continuing work in niche markets and value-added efforts was the resignation of an agronomist working in this speciality area. The analysis of his research and funding

efforts over the past fifteen years lead the College of Agriculture faculty to decide not to refill the position in the same manner. Their assessment was that CSU, AES and CE did not have resources to support this development, and finding external funding was extremely difficult.

One promising effort to support farm and ranch economic sustainability is the effort in the CSU Department of Agriculture and Resource Economics to develop a decision matrix based on analysis of approximately 2,000 records from producers served by the largest Farm Credit Services office in Colorado. Through a collaborative agreement with Farm Credit Services, their entire database has been transferred to CSU and is being analyzed to develop tools which can help both lenders and producers make wiser business decisions. It is expected that this work will yield a helpful product midway in 2001.

### **Plan of Work Review**

#### ***Objective I:***

***A. Enhance the profitability of Colorado agriculture producers with an emphasis on increased business management skills through the development and adoption of: 1) risk management tools; and, 2) comprehensive business plans including integrated resource management.***

***Projected Outputs:*** 1) A series of fact sheets outlining risk management tools available to producers; 2) Workshops conducted with Cooperative Extension in Wyoming, Montana, and Colorado based on a research study of producer risk management practices in those three states; 3) Database of enterprise budgets for a representative sample of Colorado producers developed over the five-year period, initially utilizing records integrated from the two existing farm and ranch management associations. Appropriate additional producers will be acquired from individual subscriptions or collaborations with other organizations to complete a representative sample for Colorado.

***Projected Outcomes:*** 1) Increased adoption of risk management strategies by producers; 2) An increase in agriculture producers who implement an integrated resource management business plan for their entire business; 3) Integrated summaries of costs of production and analyses of Colorado agri-businesses to assist with education on management for producers, lenders, and policy makers.

### **Year-One Results**

#### **Key Themes - Agricultural Profitability, Risk Management**

#### **Risk and Resilience in Agriculture Outputs**

The Risk and Resilience Team (RnR Team) consists of 14 Cooperative Extension Specialists and professors from Colorado State University, University of Wyoming, and Montana State University. To

date, Colorado State University and the University of Wyoming are the only land-grant universities in the nation known to have selected random samples of their producers who were at risk and asked them directly what risk management information they most needed to learn in order to design an interdisciplinary program that addresses directly producers' top priority risk management educational needs. RnR Team members submitted a manuscript with their research findings for publication. It is currently in review.

The RnR Team wrote and distributed "Risk and Resilience in Agriculture" (1999) with detailed leaders' guides, fact sheets, handouts, Power Point Slide Sets, a simulation game, and a leader-training packet. They provided in-service training twice to a total of approximately 25 Extension Agents and lenders. Specialists Robert J. Fetsch and Dennis Kaan submitted a three-state, four-year grant proposal that integrated Extension, education, and research and was designed to test the effects of two teaching methods with producers as compared with those of no-treatment control groups. The proposal was reviewed and rated "fundable," but it was not funded. The RnR Team and the Northeast Regional Planning Team have begun to provide Risk and Resilience in Agriculture information and education to risk management clubs. No outcome data has been received to date. **Linkages:** CSU departments of Agricultural and Resource Economics and Human Development & Family Studies, and Extension agents especially in the northeast and southeast regions of Colorado; Montana State University, Kansas State University and University of Wyoming Extension faculty.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** Multi-State with Montana, Kansas and Wyoming.

**Integrated CE/AES Work:** In support of this goal the Integrated Resource Management (IRM) Project (#614) team is engaged in research to evaluate the most profitable, ecologically sound and socially accepted animal production systems. The results of this research are translated directly into the risk management and production consultation output through Extension state and county faculty. Resource from CE: .3 FTE.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	2	2.5	2.5	3	3.5	1,303,439
County FTE	2	2	3	4	5	1,224,816
Total FTE	4	4.5	5.5	7	8.5	2,528,255
Budget	346,204	394,480	471,031	595,857	720,684	

**Objective I:**



***B. Enhance the diversification of income for Colorado agriculture producers by increasing the production of alternative and niche market crops: 1) crops not currently grown or in low production in Colorado; 2) increase production and value-added facilities in Colorado.***

***Projected Outputs:*** Development and introduction of successful new crops to Colorado.

***Projected Outcomes:*** Increasing acreages of the following: quinoa (from 800 acres to 1200 acres); blue corn, canola, edamame soybean, chick peas, mung beans, and azuki beans. The above are all now in demonstration and limited production in Colorado as an outgrowth of the Soil and Crop Sciences value-added research and development program. It is expected that by the year 2002 the edamame industry and canola industry will be in place yielding a total of \$33,000,000 per year. By the year 2004, chick pea and bean pasta industry yielding \$8,000,000 per year will be in place.

### **Year-One Results**

#### **Key Themes - Adding Value to Ag Products, Diversified/Alternative Agriculture**

##### **Alternative Enterprises Outputs**

A detailed feasibility study titled: “Analysis of Four Alternative Enterprises for the Fruita Consumers Coop, Fruita, Colo.,” was conducted to analyze four alternative new processing enterprises. Each enterprise was evaluated for its economic and financial impacts at the processing and farm level. The four enterprises evaluated were: Alfalfa Hay Processing, Refined Flour Milling, Oilseed Processing, and Dry Edible Bean Processing.

The alfalfa hay, oilseed, and dry bean enterprises all showed a positive net present value and cash flow at full production, indicating these enterprises would be a profitable investment. The farm level impacts varied depending on each enterprise. Alfalfa hay processing would require approximately 4,080 acres of alfalfa production, oilseed processing 11,250 acres, and dry bean processing 6,000 acres. Refined flour milling did not generate enough income to generate a fair return to the investment.

A training and information sharing session was scheduled for community leaders to deliver the results of the of the feasibility study.

The feasibility study provided the basic economic and financial information for the supply side of three alternative enterprises. The recommendation was that the coop conduct a comprehensive marketing study to gain a better understanding of each market’s individual demand components. To date, the Fruita Consumers Coop has not pursued any further study of these enterprises. **Linkages:** CSU departments of Soil and Crop Sciences, Agriculture and Resource Economics and the Agricultural Experiment Station; Colorado Department of Agriculture Marketing Division, Colorado Department of Local Affairs, Mesa County Commissioners, Fruita Consumers Coop Board of Directors, Mesa County Economic Development, and Fruita City Council.

**Source of Federal Funds:** Smith-Lever, Hatch

**Scope of Impact:** State Specific

**Integrated CE/AES Work:** An ongoing AES research project in support of new crop development (#729) provides information directly supportive of this Extension outreach effort. Resources from CE: .3 FTE.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	2	1	4	4	5	1,737,918
County FTE	2	1.5	3	3.5	4	1,148,265
Total FTE	4	2.5	7	7.5	9	2,886,183
Budget	346,206	118,491	615,858	654,133	788,959	

**Objective I:**

**C. Enhance Colorado producers' competitiveness through the use of appropriate new GPS/GIS and precision agriculture technologies.**

*Projected Outputs: Demonstration sites, industry/education conferences, and field tours showing the appropriate use of new technologies.*

*Projected Outcomes: Increased profit through the adoption of appropriate GIS and GPS technologies in production areas of the state where economies of scale make this technology feasible.*

**Year-One Results**

**Key Themes - GIS/GPS, Agricultural Competitiveness**

**Use of Appropriate New Agriculture Technologies Outputs**

Participation in this objective is through field days and presentations to organized focus groups. Discussions are ongoing regarding the best strategies to follow in meeting outreach and technology transfer needs. No outputs are available currently that would help meet outreach and technology transfer needs. Technology adoption rates have been impacted by the depressed farm economy. **Linkages:**

CSU departments of Chemical and Bioresource Engineering, Agriculture and Resource Economics, Soil and Crop Sciences, Bioagricultural Sciences and Pest Management; state, regional, and county faculty; Agricultural Experiment Station, private seed companies, equipment companies and other agribusiness interests; Agricultural Research Service.

**Source of Federal Funds:** Smith-Lever, Hatch

**Scope of Impact:** State Specific

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	3	1.5	4	4.5	5	1,931,020
County FTE	2	3	3	3.5	4	1,148,265
Total FTE	5	4.5	7	8	9	3,079,285
Budget	442,755	208,968	615,858	702,409	788,959	

***GOAL II: A safe and secure food and fiber system.***

*Issue: Coloradans are particularly concerned about the safety and purity of their food supply. This is especially true of those persons who have immigrated to Colorado for the healthy natural environment and active lifestyle.*

*An increasing number of Coloradans live in an urban environment and their views dominate the state legislature and many state policies. Coloradans are critical of the agriculture community whenever food safety alarms or food-borne illnesses become a matter of public attention. Specific concerns surround pesticide residues, microbial safety, and natural toxins. A strong environmental group in Colorado is critical of new biotechnology methods and preservation/packaging methods.*

*While a number of specific food safety initiatives are funded by 3(d) funding, food safety is a important component of our ongoing base programs. In 1996, 608 cases of food-borne illnesses were reported to the Colorado Department of Public Health and Environment (approximately 20 cases per 100,000 people). It is estimated that the cost in health care and loss of work productivity represents 75-330 million dollars annually in Colorado.*

*Colorado participated in the 1995 and 1996 regional Behavioral Risk Factor Surveillance System on food handling behaviors and consumption of foods. Half of the survey respondents*

*(50.2%) reported eating undercooked eggs; by comparison 62% of Coloradans reported eating undercooked eggs. Coloradans also report consuming more pink hamburger meat (28.8%) than the other states surveyed (19.7%). Approximately, 23% of the Colorado respondents reported not washing their hands after handling raw meat or chicken, and 28% of Coloradans responded that they did not wash cutting surfaces with soap after using it with raw meat or chicken. Both of these percentages were higher than the averages in other states.*

## **Overview of Goal II for Program Year 2000**

With an ever-increasing urban population and a strong commitment to wellness and healthy living there is concern regarding safe food throughout Colorado.

Ongoing Extension food safety programs have included support for specific projects selected by regional teams, such as the Northwest Thermometer Use Campaign and the ongoing regional teams that provided food safety certification using the ServSafe curriculum. These eight ServSafe Teams provide statewide access to training for food service supervisors. The addition of the Food Handler ServSafe Program has enabled small businesses to send more staff for the training. Conversations with county faculty throughout the state show that the impact data on the ServSafe Program is particularly impressive to local stakeholders. They are impressed that congregate feeding sites for the elderly as well as nursing home facilities, school food services, daycare, and food retail establishments have sent staff members whose increased skill can impact the health of thousands of Coloradans. This is one program about which we receive strong local support for continuance. At the 2000 stakeholders' meeting held in the Northwest, a concerted request was made that more of this programming be available throughout that region. The team which leads these efforts, Dr. Pat Kendall, Ms. Melissa Bardsley, and their regional contacts have shown excellent focused efforts with good data collection.

As an enhancement of these efforts, graduate students are working with Dr. Kendall and Dr. Jennifer Anderson on master's theses related to the most effective educational techniques for changing behavior related to food safety. We expect, in the future, that these efforts will pay off with enhanced curriculum models.

## **Plan of Work Review**

### ***Objective II:***

- A. *Promote food safety across the food chain from production through consumption.***

***Projected Outputs:*** 1) A rapid response and information service including the safe food web site; 2) a food safety list serve; and 3) a quarterly food safety newsletter.

*Projected Outcomes: 80% of Extension program participants will show increased knowledge of recommended food handling practices through pre/post survey.*

## **Year-One Results**

### **Key Themes - Food Safety, Food Handling, Foodborne Illness**

Food safety education initiatives were implemented in Colorado with the overall objective to promote the reduction of food-borne illness, including:

- 1) Extension Nutrition Program (ENP) efforts;
- 2) Handwashing project for elementary school children;
- 3) Thermometer use educational campaign;
- 4) Rapid Response and Information system (web site, listserv and quarterly newsletter);
- 5) Rocky Mountain Food Safety Conference.

Each project targets a somewhat different audience. The Food Safety Certification and Train the Trainer project is designed to increase the capacity of Extension agents, health department inspectors and dietary and health care professionals to provide high quality education to food service workers, supervisors and consumers. The initial audience is professionals; the ultimate audience is consumers, food service workers and food service supervisors. Persons who prepare and serve food to audiences at high risk for food-borne illness, including infants and children, the elderly and the chronically ill will be specifically targeted for delivery of food safety information; this includes child and adult care providers. The Thermometer Use campaign targeted consumers. The Handwashing Education project targeted elementary school children and their teachers.

#### **ENP Adult Food Safety Outcomes**

During the 1999-2000 reporting year, 2,241 limited-resource adults received food safety education through the Colorado Extension Nutrition Programs (ENP). Outcomes from completed entry & exit paperwork showed:

- 55% of ENP participants more often thaw frozen foods correctly;
- 38% of ENP participants more often refrigerate perishable foods correctly.

#### **ENP Youth Food Safety Outcomes**

Additionally, ENP reached 2,991 low-income youth in the 1999-2000 reporting year. This was accomplished by 146 youth groups that met an average of six times each for a total of approximately six contact hours per participant that include food safety education.

Evaluations on samples of groups showed the following impacts:

- 64% improved their food safety practices (primarily hand-washing)

#### **Handwashing Project for Elementary School Children Outcomes**

Upon the recommendation of the advisory group, the group decided to first evaluate the effectiveness of the handwashing activity by measuring change in awareness rather than change in behavior. It was determined that observing children washing their hands in a discrete manner would be

difficult to accomplish. Instead, the group worked on designing a pictorial quiz which would be used pre and post activity to assess a change in the children’s awareness of when they need to wash their hands.

Four kindergarten classes from Poudre Valley School District and five First Grade classes from Boulder Valley School District received the handwashing activity. The pictorial quizzes were analyzed for change in awareness.

The handwashing activity was presented to a total of 165 children (80 Kindergartners and 85 First Graders). Fifty-one percent (43/85) of the First Graders completed the pictorial testing process and could be analyzed. Table 1 shows mean pre- and post-activity scores for three different classes of First graders.

**Table 1: First Grade--Average Pre and Post Scores**

<i>Class</i>	<i>Pre</i>	<i>Post</i>
<b>1 n=15</b>	<b>70.8%</b>	<b>89.2%</b>
<b>2 n=15</b>	<b>90%</b>	<b>97.5%</b>
<b>3* n=13</b>	<b>96.2%</b>	<b>96.2%</b>

*\*Note-this class had open discussion during the pre test with the teacher in regard to which pictures should be circled.*

**Sixty percent (48/80) of the Kindergartners completed the pictorial testing process and could be analyzed. Table 2 shows mean pre- and post-activity scores for three different classes of Kindergartners.**

**Table 2: Kindergarten--Average Pre and Post Scores**

<i>Class</i>	<i>Pre</i>	<i>Post</i>
1 n=16	65.6%	73.4%
2 n=17	66.1%	75.7%
3 n=15	54.2%	72.5%

The results from this program suggest that First Graders have a greater initial awareness of when they should wash their hands in comparison to Kindergartners. This would be expected as First Graders have had an additional year in school to learn about handwashing. All classes, with the exception of the class #3 First Graders, showed an increase in awareness of when they should wash their hands after completing the handwashing activity. As noted under table 1, Class 3 did not show an increase in awareness after completing the activity. Upon discussion with the teacher it was most likely explained by the fact that the teacher held an open discussion with the class on how to answer the pictorial quiz. The handwashing activity was enjoyed by the kindergartners and first graders and the activities appeared age appropriate based on the students enthusiasm to participate. Additional testing needs to be performed among second and possibly third grade students to assess for age appropriateness of the activities.

Many handwashing programs are currently available and most contain similar content. The unique aspect to this program is the use of a pictorial pre/post quiz as a means to evaluate for impact. The pictorial quiz is easy to administer, especially with low literacy groups and when encountering language barriers. We used this quiz with both English and Spanish speaking children and provided minimal instruction on how to complete.

The handwashing activity continues to be used in Colorado and currently Extension Agents are training MFP and or FSA's to administer the program in elementary schools.

### **Thermometer-Use Educational Campaign Outcomes**

During November, Extension Agents from the Northwest Region of Colorado, embarked on a mission to increase food safety knowledge of the consumer. The holiday season was chosen as a good time to educate the consumer about the proper use of food thermometers. Consumers were encouraged to not only use a food thermometer to test for doneness on turkeys but to use with other food items as well. Extension Agents collaborated with grocery stores in their communities to set-up and staff displays that were strategically located close to the freezers containing turkeys.

As consumers shopped for their Thanksgiving bird of choice they had the opportunity to receive food safety information and a free quick response thermometer. A critical question for the agents was how effective this approach would be at changing someone's behavior to using a food thermometer. The evaluation process utilized was simple, brief and user friendly. A pre-questionnaire consisting of 4 yes/no questions was initiated at the display and once completed the consumer received a free food thermometer. The consumer was then mailed a post card approximately 4-5 days after Thanksgiving. The post card contained 5 questions. A comparison between the pre and post questionnaire responses allowed the agents to evaluate for behavior change to increase usage of the food thermometers on turkeys as well as with other food items.

A total of 781 consumers completed the pre-questionnaire. The majority found the display and information useful (99.5%). Less than half (46.3%) of the participants reported usually using a thermometer when cooking. This correlates with the Food Safety and Inspection Service (FSIS) reporting that only 50% of consumers use thermometers. After visiting the display approximately 98% reported that they plan to use the thermometer when cooking. Interestingly less than half (48%) were aware that Colorado State University, Cooperative Extension provided food safety information.

The follow-up postcard questionnaire was received from 231 consumers who had visited the thermometer display. The results from the follow up suggest that all (100%) of participants found the display and handouts useful. More than half (78%) used the new thermometer for their turkey and approximately 54% used the thermometer for other food items. The majority (99%) would visit point of purchase food safety displays in the future.

An interesting finding was that those who used the thermometer for their turkey were more likely to use it for other foods (58%), than those who did not use it for turkey (38%). ( $p < .01$ ). This finding supports what we all know about behavior change, it usually starts with small, successful steps. The adoption of using the food thermometer for one food can transfer to using the thermometer with other foods.

In comparison, Koepl's report on barriers that limit consumers' use of thermometers, recommended that to increase consumers usage of thermometer it would be more beneficial to highlight

ordinary meals, vs. special events (10). The participants in the focus groups indicated that thermometers are most often used during meal preparation at holidays and special events and reinforcement of the behavior at these times was not necessary. In light of the results from the Northwest Region it may be more accurate to state that encouragement of thermometer usage during the holidays and praise of its usage may actually encourage the adoption of thermometer usage with ordinary meals as well.

**Table 3: Results of Holiday Thermometer Promotion in Grocery Stores in Northwest Colorado**

Questions	Total
N=	781
<b>At Display:</b>	
<b>1. Found display &amp; handouts useful.</b>	<b>751 (99.5)*</b>
<b>2. Usually use a thermometer when cooking.</b>	351 (46.3)
<b>3. After today, plan to use thermometer when cooking.</b>	740 (97.8)
<b>4. Before today, aware that CSU Cooperative Ext. provided food safety information.</b>	363 (47.9)
<b>At Follow-up:</b>	
<b>1. Found display &amp; handouts useful.</b>	231 (100)
<b>2. Used the new thermometer for their turkey.</b>	180 (78.3)
<b>3. Used the thermometer for other food items.</b>	124 (53.7)
<b>4. Will visit food safety displays in the future.</b>	229 (99.1)

\*n, yes (%yes)

### **Rapid Response Information System Outputs**

To improve the responsiveness of the Extension Food Safety and Quality program to the informational needs of both consumers and professionals, a three-pronged approach to information dissemination was established in 1996. This included a listserv designed for professionals and interested consumers, a website designed for consumers: [www.colostate.edu/Orgs/SafeFood/](http://www.colostate.edu/Orgs/SafeFood/) and a quarterly newsletter, SafeFood News, designed to provide in-depth information on food safety issues and to promote up-coming events.

As of January 2000, approximately 200 people were receiving the quarterly SafeFood Newsletter and 155 people were subscribed to the SafeFood listserv. Subscribers represent a varied professional audience which includes: Extension agents and specialists, Environmental Health specialists, veterinarians, physicians, nurses, dietitians, food retailers, food service managers, consultants, food handlers, chefs, etc.. The numbers continue to grow as people hear of this rapid, accurate, up-to-date information system which addresses food safety issues. The ability to access this information will



continue to be advertised and marketed during food safety functions, for example at food safety trainings and conferences.

**Rocky Mountain Food Safety Conference (RMFSC) Outputs**

Colorado State University Cooperative Extension continued to provide support to the RMFSC planning committee, through active participation on the speaker subcommittee. The conference continues to be attended by approximately 200 participants each year. During 1999 the committee was approached by the National Environmental Health Association (NEHA), to offer the RMFSC in conjunction with the NEHA National Conference scheduled for June, 2000 in Denver, Colorado. This was a new opportunity for the RMFSC and the planning committee agreed to help NEHA plan the schedule for the food track presentations of the conference.

**Source of Federal Funds:** Smith-Lever, USDA Nutrition Services

**Scope of Impact:** State Specific

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1	2	1.5	2	2	724,133
County FTE	1	10	2	2	2	612,408
Total FTE	2	12	3.5	4	4	1,336,541
Budget	173,102	522,695	297,929	346,205	346,205	

**Key Themes - Food Security**

**Food Security Outcomes**

- 1) ENP adult participants will report saving money on their food bill;
- 2) ENP adult participants will report not running out of food by the end of the month

During the 1999-2000 reporting year, 2,241 limited-resource adults received food resource management education through the Colorado Extension Nutrition Programs (ENP).

Outcomes from completed entry & exit paperwork showed:

- A sub-sample of 41% of ENP participants reported saving an average of \$68.45 per month on their family food bill as a result of the program.
- 37% of participants (809 families) reported they less often ran out of food by the end of the month.

**Linkages:** CSU departments of Food Science & Human Nutrition, Animal Sciences, Epidemiology and Environmental Health; state Extension specialists and county Extension faculty, Colorado Nutrition Network, Extension Nutrition Programs; Colorado Department of Public Health and Environment, Colorado Department of Agriculture, Food and Drug Administration-Denver district, Colorado Department of Education, retail food establishments, and Colorado county school districts.



**Objective II:**

**B. Provide certification training for food handlers.**

**Projected Outputs:** Food safety certification and train-the-trainers project to deliver food safety education programs for dissemination to food handlers.

**Projected Outcomes:** 70% of attendees at an Extension sponsored food certification program will report plans to adopt recommended food handling practices and increased knowledge of risks in food safety and health.

**Year-One Results**

**Key Themes - Food Safety, Food Handling, Foodborne Illness**

**Certificate Training for Food Handlers Outcomes**

The Food Safety Certification and Train the Trainer project is designed to increase the capacity of Extension Agents, health department inspectors and dietary and health care professionals to provide high quality education to food service workers, supervisors and consumers. The initial audience is professionals; the ultimate audience is consumers, food service workers and food service supervisors. A total of 132 professionals attended one of three ServSafe train-the-trainer programs offered in 1998 & 1999. As a result of the three train-the-trainer programs, 103 professionals were eligible to be certified as ServSafe instructors. These professionals were then encouraged to form multi-agency teams, which would provide ServSafe trainings to the foodhandlers in their communities. During the calendar year of 1998, five multidisciplinary, multi-agency training teams formed as a result of the train-the-trainer programs. Due to the fact that many agencies face the restraint of limited resources (mainly staff time), the formation of multi-agency teams were encouraged.

This team approach allows agencies to assist each other in successfully providing the needed food safety trainings to a large number of foodhandlers. During 1998 the five teams trained a total of 329 food handlers in Colorado. For the calendar year 1999, the number of teams increased to six and resulted in 435 foodhandlers being trained in Colorado. Calendar year 2000 brings on board two additional teams for a total of 8. As of October 2000, the eight teams had trained an additional 393 foodhandlers, bringing the three-year total to 1,157.

**Foodhandlers Trained in Colorado Counties  
by Calendar Year**

	<b>1998</b>	<b>1999</b>	<b>2000</b>
<b>Northeast Region</b>	33	91	100
<b>Eagle</b>	111	90	93
<b>Delta</b>	9	<b>In 1999 Delta and Montrose combined with Mesa which took the lead.</b> 51	41

<b>Montrose</b>	98		
<b>Las Animas/ Huerfano</b>	37	164	79
<b>El Paso (one program, not a team)</b>	41		
<b>Gunnison</b>		15	*
<b>Rio Blanco / Routt</b>		24	*
<b>Summit</b>			80
<b>Pueblo</b>			*
<b>Totals by Year</b>	329	435	393

\* No data to report at this time.

The teams have used two ServSafe programs, one that is intended for supervisors and the other, which is intended for the foodhandler. The full certification course is usually given during an eight hour period and targeted towards the supervisor. To pass, the participant must score at least a 75% on the required exam. In 1998, the teams had a 98% (86/88) success rate when providing the full certification course. Two, 8-hour full certification courses were provided to a total of 88 participants. The second ServSafe program being offered targets the foodhandler and is given during a four hour period. This program covers the basics of food safety and is presented in a more “applied” manner. The trainers test for increased knowledge through the use of a pre and post test. In 1998, a sample of 37 participants' mean knowledge score increased from 64% pre workshop to 94% post training.

### **Success Stories**

–ServSafe has helped foster new and/or strengthen existing multi -agency, multidisciplinary partnerships. This multi-agency team approach is one of the most efficient ways to provide needed food safety trainings to a large number of foodhandlers, when staff resources among all agencies are limited. Not only have new partnerships formed to provide ServSafe, but several counties have formed partnerships with local health department staff to provide additional food safety programs to the consumers.

–ServSafe has allowed foodhandlers and their supervisors to attend ServSafe programs at an affordable cost in Colorado. For example, a food establishment training coordinator from northeast Colorado stated “I can now send 3 food service employees for the amount I used to spend on one to attend a ServSafe certification training, thank you”

–Many agencies in Colorado now contact CSU Cooperative Extension when they are in need of a ServSafe foodhandler and/or manager certification training. We currently market our programs, as well as the other ServSafe team programs via a quarterly SafeFood newsletter.

**Linkages:** CSU departments of Food Science and Human Nutrition and Animal Sciences; state specialists and county faculty; Extension Nutrition Programs; Colorado Department of Health and Environment, local health departments, congregate meal site managers, retail food industry partners.

**Source of Federal Funds:** Smith-Lever, USDA Nutrition Services

**Scope of Impact:** State Specific

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1	1	1.5	2	2	724,133
County FTE	1	8	2	3	3	842,061
Total FTE	2	9	3.5	5	5	1,566,194
Budget	173,102	389,170	297,929	422,755	422,755	

**Objective II:**

**C. Enhance red meat safety.**

*Projected Outputs: Training programs on verification criteria and consulting to implement mandatory HACCP systems in meat packing and processing plants.*

*Projected Outcomes: Increase the number of Colorado red meat producers, packers and processors who implement preventive systems to improve meat safety and quality.*

**Year-One Results**

**Key Themes - Food Handling, Food Safety**

The Golden Plains Area in eastern Colorado has focused a program on Meat Quality Assurance (MQA) that will ensure appropriate livestock production practices for youth and adult producers of meat animals in order to provide safe and wholesome meat products to the consumer. Relative to the meat industry, youth livestock shows serve as a highly visible focal point that represents the entirety of animal agriculture to many consumers, and with that spotlight comes responsibility to the industry and more importantly to the consumer. The problems of the show ring and the accompanying possibility of residue violations in market livestock have created a demand for additional education at the youth level. In response, Colorado 4-H Youth Development requires that members enrolled in meat animal livestock projects complete MQA certification the first year they enroll in a meat - animal project, and again after they turn fourteen if they are still enrolled in meat - animal projects. Youth participants need to accept the responsibility for the wholesomeness of the product being sold.

**Meat Quality Assurance Outputs**

Colorado 4-H Youth are completing pre- and post-tests to determine knowledge gained as a result of attending youth MQA programs. Follow-up surveys will be used to determine changes made in production practices to meet MQA. Producers will be surveyed to determine changes necessary in production practices to meet MQA program goals, and most importantly, determine any affects on profitability. **Linkages:** Colorado 4-H/Youth Development Program, CSU departments of Animal Sciences and Food Science & Human Nutrition; Golden Plains Area 4-H/Youth Agents, other Northeast Region Extension offices and 4-H/Youth Volunteer Leaders; Agricultural Experiment Station, Colorado Cattlemen's Association, Colorado Livestock Association, Colorado Pork Producers Council, Local Cattlemen's Associations, area Vocational Agriculture Instructors, local Veterinarians; Lamb Producers Association.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific

**Integrated CE/AES Work:** Red meat quality and safety is enhanced through an ongoing AES funded project (#214) that provides research and technology transfer to producers and Extension educators. Resources from CE: .4 FTE.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1	1	1.5	2	2	724,133
County FTE	2	8	3	3	4	1,071,714
Total FTE	3	9	4.5	5	6	1,796,147
Budget	249,653	389,170	374,480	427,755	499,306	

**Objective II:**

**D. Enhance the health of Coloradans by increasing awareness and skills to manage animal diseases.**

**Projected Outputs:** 1) Consultation by Extension veterinarians and researchers; 2) education fact sheets; 3) electronic news alerts; and 4) training teleconferences and meetings to educate key citizens.

**Projected Outcomes:** 1) Increased awareness and increased number of emergency preparedness plans for animal disease threats; 2) enhanced skill/consultation

*among Extension personnel in handling individual consumer/producer questions on animal health.*

**Year-One Results**

**Key Themes - Food Safety, Animal Health**

**Animal Disease Program Outputs**

Seminars on “Economic Diseases of Sheep” were presented to sheep producers at an educational program in Manhattan, KS, organized by Kansas State Cooperative Extension; 187 people attended. In cooperation with the University of Wyoming, Colorado Cooperative Extension provided consultation to a producer-organized Lamb Marketing Cooperative; 26 participants attended.

Colorado Cooperative Extension conducted 18 workshops for producers and students in “Lambing Time Management,” which attracted 31 participants and four workshops on “Breeding Management,” which attracted 42 participants. **Linkages:** CSU departments of Clinical Sciences, Epidemiology and Environmental Health, Pathology, Microbiology, Animal Sciences, Food Science and Human Nutrition, and Fishery and Wildlife Biology; Veterinary Medicine Diagnostic Laboratory, and county and regional faculty; Colorado Department of Agriculture, Colorado Division of Wildlife, and Colorado Department of Health and Environment.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific

**Education and Outreach:** This program will be integrated into the state Plan of Work and regional Plans of Work in the broad programming area of Improving Nutrition, Food Safety, and Health, and in the area of Sustaining Agriculture and the Environment. In 1999 -2000, the Colorado Department of Agriculture is funding .5 FTE of an Extension veterinarian to work in the programming area. In 2000-2001, the State Veterinarians Office and CSU Extension are developing a statewide integrated staffing plan.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1.5	2	2.5	3	3.5	1,206,888
County FTE	2	2	3	3	4	1,071,714
Totat FTE	3.5	4	5.5	6	7.5	2,278,602
Budget	297,929	346,204	471,031	519,306	644,133	

***GOAL III: A Healthy Well-Nourished Population***

*Issue: Many Coloradans are immigrating to take advantage of the healthy lifestyle in a state rich with natural resources and recreational opportunities. Coloradans therefore, are sensitive to health and wellness issues. However, there are specific health-related issues in Colorado including obesity, diabetes mellitus, and increasing numbers of low-birth-weight babies. The disparity between high and low incomes in Colorado, the frantic pace of dual career families, commuting schedules, and the fast-pace of new development and growth in the state, encourages stress-related illnesses, poor dietary practices and inconsistent exercise habits.*

### **Overview of Goal III for Program Year 2000**

The nutrition programs in Colorado are well integrated with special funding for the Nutrition Network, Food Stamp Nutrition Education, and the Expanded Food and Nutrition Education Program.

The Dining with Diabetes Program has been well received and includes a cooking school curriculum. Data from participants in this program are currently being analyzed. We continue to serve youth and adults in the Extension Nutrition Programs and have strong evidence of knowledge change and some behavior change. Our collaborations continue to increase, particularly with the effective efforts within the Nutrition Network. Ongoing work with the University of Colorado Health Sciences Center, the Colorado Department of Education, the Colorado Department of Human Services, and the Colorado Department of Public Health and Environment are strong state reinforcements for our work.

The Nutrition Network has been successful in attracting a great number of local and regional agencies who are providing joint health and nutrition educational sessions in communities. The social marketing pilot study titled, “The Food Friends: Making New Food Fun for Kids” has attracted a great deal of attention and media coverage. The Healthy Habits Family Fiesta in San Luis Valley was a particularly powerful community event. A number of local producers and local food businesses were present to reinforce the messages of nutrition and physical activity. These relationships will continue to enhance the impact of our nutrition programs by building the defusion network to effectively carry a consistent nutrition message.

### **Plan of Work Review**

#### ***Objective III:***

- A. ***Coloradans will increase their knowledge and adoption of practices which promote healthy lifestyles.***

***Projected Outputs:*** 1) Educational programs provided at school, work, community, and health care sites to small and medium size groups; and, 2) teleconferences, individualized consultation and distance learning programs to targeted groups.



**Projected Outcomes:** *Coloradans will increase their knowledge and adoption of practices which promote healthy lifestyles including; 1) balancing food intake with physical activity in order to maintain or improve weight; 2) eating less fat, less saturated fat, and less cholesterol; 3) eating more grain products, vegetables, and fruits and a variety of foods; 4) moderation in salt and sodium and sugars; and, 5) increase moderation among persons who drink alcohol beverages.*

## **Year-One Results**

### **Key Themes - Human Nutrition, Human Health**

#### **Colorado Nutrition Network (CNN) Outputs**

A 12-week pilot study targeted to limited-resource preschoolers to encourage willingness to try new foods. An integrated nutrition education curriculum and support materials were developed and branded with the Food Friend characters.

#### **Colorado Nutrition Network Outcomes**

886 preschoolers participated in the program, with these results:

- 452 (51%) increased their level of physical activity
- 477 (54%) moved closer to the dietary guidelines recommendations by increasing the variety of foods eaten

#### **“Dining with Diabetes” Outcomes**

During 2000, five Colorado counties piloted this “Dining with Diabetes.” At this time the data has not been completely analyzed as the reunion schedule affects data collection and we continue to collect data on the year 2000 up through the first 5-6 months of the year 2001. The program evaluation tool will provide data on change in knowledge related to diabetes, self-efficacy information as well as behavior change. Approximately 80 participants have attended this cooking school curriculum which has been welcomed by each community as it addresses an unmet need. Next year we will be able to report more accurately on the year 2000 outcomes.

#### **ENP Outcomes**

During the 1999-2000 reporting year, Colorado Extension Nutrition Programs (ENP) graduated 2,241 limited resource adults. These individuals received in -depth nutrition education classes, consisting of 6-12 lessons. Outcomes from completed entry & exit paperwork showed:

- 94% of ENP participants (2,106) showed a positive change in any food group;
- 58% of ENP participants (1,259) more often used “Nutrition Facts” labels;
- 50% of ENP participants (1,083) more often planned meals in advance as result of this program.

Additionally, ENP reached 2,991 low-income youth in the 1999-2000 reporting year. This was accomplished by 146 youth groups that met an average of 6 times each for a total of approximately six contact hours per participant. Evaluations on samples of groups showed the following impacts:

- 90% of participants eat a wider variety of foods;
- 85% know more about nutrition;
- 76% increased their ability to select low-cost, nutritious foods

**Linkages:** (ENP) CSU Department of Food Science and Human Nutrition, 29 County Extension Offices; (CNN) CSU Department of Food Science and Human Nutrition, Cooperative Extension Agents, CSU Department of Human Development and Family Studies; CSU Department of Marketing; University of Colorado Health Sciences Center; Colorado Department of Education (School Lunch and Breakfast Program, TEAM Nutrition); Colorado Department of Human Services (Food Stamps, Commodity Supplemental Food Program, TEFAP, Division of Aging Services); Colorado Department of Public Health and Environment (WIC, CACFP); Colorado Head Start Association, Food Bank of the Rockies, Care and Share. (Dining with Diabetes) Colorado Diabetes Control Program, Medical communities in each of the five pilot counties (includes local hospitals, community health centers, local county health departments, existing diabetes coalitions, etc.)

**ENP Collaborating Agencies:**

**Schools and Child-Care Systems--**

- Alamosa Open High School (Pregnant & Parenting Teenagers) –San Luis Valley
- Board of Cooperative Education Services – Otero Co.
- Byron-Syring Delta Center – Rio Grande Co.
- Centennial Elementary Parents as Teachers Program
- Child Development Center – Crowley Co.
- Child Development Center – Otero Co.
- Community Partnership for Child Development (Head Start, Evenstart, Free to Grow Program)
- Corazon Alternative School
- Fairview High School Teen Parents--Boulder Co.
- Florence Crittenton Alternative School – Denver Co.
- Greeley Central High School – Weld Co.
- Harrison High School Pregnant Teen Program – El Paso
- Keating Alternative School
- La Lave Family Literacy Services – Alamosa Co, Rio Grande Co.
- Las Animas School District Re-1
- Lincoln Middle School Parents
- Longmont Adult Education – Boulder Co.
- McClain Community High School – Jefferson Co.
- Monterey Elementary Parents as Teachers Group
- Poudre R-1 School District Teen Parent Program – Larimer Co.
- Rocky Mountain SER – Otero Co., Denver Co.
- School District 11 Transitions Program – El Paso Co.
- School District RE1J – Gunnison Co.
- Skyline High School Life Skills Class
- St. Vrain Valley Teen Parent Program – Boulder Co.
- Tesla Education Opportunity Program – El Paso Co.
- The Village Preschool
- Thompson R-1 School District Teen Parent Program @ Ferguson High School – Larimer Co.
- Trinidad Public School System – Las Animas Co.

Trinidad State Junior College – Las Animas Co.  
San Luis Valley Education Center- San Luis Valley  
West Middle School Parents Group  
Youth Energy Alternatives Program

**Health Care Systems--**

Alamosa County Public Health – San Luis Valley  
American Lung Association – Pueblo Co.  
Arapahoe County Tri-County Health Dept.  
Arapahoe House – Arapahoe Co.  
Argus Home Healthcare – Pueblo Co.  
Boulder Mental Health—Boulder Co.  
Cenikor – Jefferson Co.  
Colorado Dept. of Public Health & Environment  
Costilla County Nursing Service: Home Health Department  
Commodities Office  
Costilla County Public Health Nurses  
Gunnison County Public Health Department  
Haven House- CU Health Sciences Center, (Fort Logan Campus) – Denver Co.  
Healthy Pueblo 2000 Group  
Libby Bortz Assisted Living Center  
Lincare Home Healthcare – Pueblo Co.  
Littleton Senior Housing – Arapahoe Co.  
Longmont United Hospital – Boulder Co.  
Monfort Children’s Clinic – Weld Co.  
Options for Long Term Care – San Luis Valley  
Poudre Health Services – Larimer Co.  
Poudre Valley Prenatal Care – Larimer Co.  
Residential Treatment Center – Weld Co.  
Rocky Mountain Prevention Research Center – San Luis Valley  
San Luis Valley Area Health Education Center  
San Luis Valley Mental Health Center  
San Luis Valley Regional Medical Center  
Spectra Pregnancy Center  
Sunrise Community Health Center – Weld Co.  
Valley Wide Health Services – San Luis Valley  
Weld County Health Department  
Women, Infant, & Children (WIC) – Larimer, Otero, Crowley Co.

**Social Services & Housing--**

Adams State College Family Housing – Alamosa Co.  
Alamosa County Dept. of Social Services  
Arapahoe County Dept. of Social Services  
Arapahoe County Employment & Training Division  
Arapahoe County Food Stamp Office  
Arapahoe County Family Self-Sufficiency Unit  
Arapahoe/Douglas Works!  
Azteca Apartments – Pueblo Co.

Boulder Aging Services  
Boulder Community Foodshare  
Boulder County Child Care Assistance Program  
Boulder County Housing  
Boulder Emergency Family Assistance  
Bridgeway – Jefferson Co.  
Care & Share, Food Bank for Southern Colorado – El Paso Co., San Luis Valley  
Casa Del Sol Senior Housing  
Centennial Village Senior Housing – Weld Co.  
City of Boulder Housing  
Colorado Works Employment Program – Larimer Co.  
Conejos County Dept. of Social Services  
Costilla County Dept. of Social Services  
Costilla County Housing Authority  
Country Manor Senior Housing  
Crowley County Social Services  
Denver Adult Services  
Denver County Food Assistance Program  
Denver County Housing Authority  
Denver County Social Services  
DMA Plaza for Seniors – Larimer Co.  
Englewood Senior Housing  
Equal Opportunities Program – El Paso Co.  
First Steps of Weld County  
Food Bank of the Rockies - Denver Co.  
Fort Collins Employment & Training Services – Larimer Co.  
Fort Collins Housing Authority – Larimer Co.  
Fort Collins Kid Care – Larimer Co.  
Glendale Family Center  
Governor’s Farm Senior Housing – Weld Co.  
Greeley Manor – Weld Co.  
Greeley Senior Housing – Weld Co.  
Gunnison County Dept. of Social Services  
Gunnison County Housing Authority  
Housing Authority of Pueblo  
Huerfano County Dept. of Social Services  
Jefferson County Dept. of Health & Environ.  
Jefferson County Human Services/Tri-County Workforce Development Center  
La Gente Family Advocacy Programs – San Luis Valley  
Lamar Housing Authority – Prowers Co.  
La Puente/Adelante – Alamosa Co.  
Las Animas County Dept. of Social Services  
Loveland Employment & Train. Services – Larimer Co.  
Loveland Kid Care – Larimer Co.  
Oakbrook I Apartments – Larimer Co.  
Otero County Social Services Dept.

Posada Homeless Family Shelter  
 Prowers County Social Services  
 Pueblo County Dept of Housing & Human Svs.  
 Pueblo County Dept. of Social Services  
 Rio Grande-Mineral Counties Dept. of Social Services  
 Saguache County Dept. of Social Services  
 Six Points – Gunnison Co.  
 Southeast Aurora Family Resource Center  
 Sparks Residential Supportive Services – Pueblo Co.  
 Springfield Court Apartments – Larimer Co.  
 St. Thomas Food Bank  
 Tri-Lakes Cares Food Pantry  
 Walsenburg Housing Authority – Huerfano Co.  
 Weld County Social Services and Human Services  
 Weld Food Bank – Weld Co.  
 Workforce - Boulder Co.

**Community Services--**

Action Against Domestic Assault  
 Action Against Hunger and Malnutrition – San Luis Valley  
 Advocates Against Domestic Assault  
 Aggie Village Single Parent Support Grp – Larimer Co.  
 Alamosa Senior Center – San Luis Valley  
 Aurora Family Resource Center  
 Bellevue Senior Center – Larimer Co.  
 Blanca-Ft. Garland Community Center–San Luis Valley  
 Boulder Project Self-Sufficiency  
 Boulder Senior Center  
 Boys and Girls Club of the San Luis Valley  
 Child Advocacy Resource & Education – Weld Co.  
 Child and Adult Care Food Program  
 Children’s Services of Colorado  
 Coalition for the Homeless  
 CO Coalition on Hunger & Food Policy Group  
 Colorado Office of Resource & Referral Agencies, Inc – San Luis Valley  
 Community Infant Project  
 Corazon Senior Center  
 Crowley Ladies Society – Crowley Co.  
 Education and Life Training Center – Larimer Co.  
 Family Independence Initiative Project  
 Family Tree/Karlis Center  
 Fostering Better Communities  
 Fowler Senior Center – Crowley Co.  
 Fountain Valley Senior Center – El Paso Co.  
 Hancock Senior Center – El Paso Co.  
 Hillside Community Center – El Paso Co.  
 Jefferson County Adolescent Pregnancy &

Parenting Program (JCAPPP) – Jefferson Co.  
 Joseph Edwards Senior Center - Pueblo Co.  
 La Junta Senior Citizens Center – Otero Co.  
 Las Animas/Huerfano County of Council of Governments  
 Longmont Career Development Center – Boulder Co.  
 Louisville Senior Center – Boulder Co.  
 Meadows Park Community Center – El Paso Co.  
 Mi Casa Resource Center for Women – Denver Co.  
 Monte Vista Public Library – Rio Grande Co.  
 Morningstar Adult Day Care  
 Nine News Health Fair – Gunnison Co.  
 Northside Aztlan Center – Larimer Co.  
 Ordway Senior Citizens – Crowley Co.  
 Partners for Healthy Families – Jefferson Co.  
 Pueblo Parks & Recreation  
 Pueblo Senior Resource Development Agency  
 Sage Center – Rocky Ford – Otero Co.  
 Salvation Army – Denver Co., Boulder Co.  
 San Luis Valley Area on Aging  
 San Luis Valley Cattlewomen’s Association  
 San Luis Valley Community Connections  
 Senior Nutrition Program – Larimer Co.  
 Senior’s Resource Center – Jefferson Co.  
 Share Colorado – El Paso Co., Larimer Co.  
 Share Our Strength/Operation Frontline – Weld Co., Larimer Co.  
 Southern CO Developmental Disability Services – Las Animas Co.  
 Taking Off Pounds Sensibly – Pueblo Co.  
 Teen Lunch Bunch – Gunnison Co.  
 Tri-County Senior Center – San Luis Valley  
 Volunteers of America  
 Walsenburg Community Center – Huerfano Co.  
 Wellington Senior Center  
 Yellow House Senior Group  
**For Profit Organizations--**  
 King Sooper’s Grocery Stores – Colorado  
 Mercy Housing Services Corp. – El Paso Co.  
 Safeway Grocery Stores -Colorado  
**Ministerial and Church-Related Groups--**  
 Boulder Interfaith – Boulder Co.  
 Baptist Church – Saguache Co.  
 Catholic Charities Northern – Larimer Co.  
 Catholic Community Services  
 Catholic Churches - Costilla Co., Saguache Co.  
 First Presbyterian Church – Larimer Co.  
 Lutheran Services Inn Between Program  
 Las Animas Pastoral Center

Nederland Presbyterian Church  
Presbyterian Towers  
Sister Carmen Center  
St. Joseph's Church  
Valley Church of the Nazarene – San Luis Valley

**Court Systems--**

Colorado Dept. of Corrections – Crowley & Pueblo Co.  
Larimer County Community Corrections  
Larimer County Detention Center  
Transitional Center for Women – Weld Co.  
Weld County Community Corrections Board  
Youth Offender System – Pueblo Co.

**Objective III:**

**B. *Communities will improve their capacity to address health and nutrition related needs.***

***Projected Outputs:*** Brochures, personal consultation, and letters describing available resources to promote health and nutrition in the community from Extension educators and state specialists to key community organizations, professionals in the health and education arenas and agency and governmental managers.

***Projected Outcomes:*** Increase in the 1) number of joint health and nutrition related educational sessions offered within the community; 2) number of organizations who request educational sessions from Extension educators; 3) number of communities who institute health needs assessments; 4) number of community groups who initiate health related activities, healthy food choices, or volunteerism in health and nutrition related activities; and, 5) number of community members who are trained as volunteers in La Cocina Saludable Specialists in master food preservers, or team nutrition members.

**Year-One Results**

**Key Themes - Human Nutrition, Human Health**

**Colorado Nutrition Network Outputs**

The Nutrition Education Plan for Colorado, with input from Network, FSNEP - Adult, FSNEP- Youth, and alternative educational strategies. Colorado Nutrition Network Steering Committee minutes and internal reports. Maintenance and support of two local networks: Healthy Habits in the San Luis Valley and the Denver Interagency Committee.

**The Colorado Nutrition Network Outcomes**

--Collaboratively planned social marketing pilot study, called *The Food Friends Makin New Foods Fun for Kids*,

--Initiation of the Nutrition Links Incentive Award Program,

--Local network community events:

**Healthy Habits-San Luis Valley:** During March 2000, the Family Fiesta, a free community event at the Sacred Heart Gym in Alamosa encouraged children and families to try new foods and to participate in physical activity. The event utilized a carnival format with game booths, activities, demonstrations and food. Everything about the event was tied to the goals of encouraging children and families to participate in physical activity and to try new foods.

The event included poster and coloring contests. The poster themes for contests included: The Food Friends Coloring Contest for preschoolers; My Favorite Healthy Food for elementary school students; Family Recreation Time for middle school students; Healthy Habits Logo Contest for high school students. There were over 500 entries in the preschool coloring contest and over 50 entries in the elementary poster contest. Contest winners received a mountain bike or annual pool pass while 2<sup>nd</sup> and 3<sup>rd</sup> place winners received gift certificates for sporting good stores. There was also a cooking contest for adults and teens. Contestants entered their favorite recipe in which vegetables were the main ingredient. Thirteen people participated with the winner in the teen category getting a mountain bike and the winner in the adult category receiving a health club membership.

Local producers were present to provide samples of their alternative agricultural products. The Rakhra Mushroom Farm sautéed mushrooms and passed out large containers of fresh mushrooms for the participants to take home. Participants were also treated to samples of quinoa croquets, goat cheese, goat meat and goat fudge. They could take home large baggies of locally milled whole wheat flour and potato flour with recipes to try at home. For lunch, 400 participants, workers, and volunteers received a free lamb kibbee (Middle Eastern lamb sausage patty) served on a tortilla with lettuce, tomato, and cucumber dill sauce with locally grown carrots on the side and milk to drink.

Live entertainment and interactive physical activities went on continuously throughout the event. The entertainment included Folklorical dancing, the Adams State College Dance team, the Bill Metz Elementary School Jump Rope Team, two Food Friends puppet shows and a mariachi singer. Attendees could participate in kickboxing, karate, yoga, and learn how to do tricks while jumping rope. If that was not enough, there were booths where you could make fruit animals or play carnival games all related to nutrition. The agencies operating the game booths and the activities gave away tickets to all who participated, which could be used to earn physical activity related prizes.

When participants redeemed their tickets for prizes, they were asked to complete an event evaluation. 148 people (92 children, 18 teens, and 30 adults) completed these evaluations allowing us to collect the following data on the impact of the Family Fiesta:

-- 100% of the participants surveyed enjoyed the event

-- 73% of the participants surveyed tried a new food

-- 83% of the participants surveyed tried a new activity

-- 90% of the persons who reported trying a new food said that they would try it again

-- 96% of the persons who reported trying a new activity said that they would try it again.



**Denver Interagency Committee:** July 13, 2000, the “Try New Foods” program was unveiled at the Children’s Museum in Denver, Colorado. This program, which encouraged youngsters to sample familiar as well as new foods, was showcased at the Museum through December 2000. The “Try New Foods” program encourages children to try and enjoy new foods and to help parents who cannot get their toddlers to eat anything other than mac ‘n cheese and chicken nuggets.

**Linkages:** CSU departments of Food Science and Human Nutrition and Health and Exercise Science County Extension faculty; Colorado Department of Health and Environment, Colorado Department of Local Affairs, Colorado Department of Agriculture, American Heart Association, Colorado Nutrition Network, Head Start.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	2	2	3	4	4	1,544,816,
County FTE	3	8	3	3	3	1,148,265
Total FTE	5	10	6	7	7	2,693,081
Budget	422,755	445,196	519,306	615,858	615,858	

**Objective III:**

C. **Improve the nutritional status and health of school and community athletes.**

**Projected Outputs:** *Two-day workshops for community coaches and athletic directors on topics related to exercise and fitness, food supplements, use of drugs, hormones and herb supplements, basic nutrition for performance, weight loss or gain and maintenance.*

**Projected Outcomes:** *1) Increase in nutrition and dietary knowledge among state high school and community coaches; 2) increase in requests for educational materials and presentations to coaches, athletes, and parents; and, 3) decrease in athletic injuries and health problems related to inappropriate use of exercise, supplements, stimulants, or unbalanced diets.*

**Year-One Results**

No report available for year-one.

## ***GOAL IV: Greater harmony between agriculture and the environment.***

*Issue: Agriculture is still a strong contributor to the economy of Colorado and citizens of the state are increasingly concerned about protecting the rich natural resources. Much of the new growth in population is accounted for by persons retiring to Colorado for recreational environments to enjoy and persons who seek a high quality of life including the enjoyment of the resources of a beautiful and healthy environment. Rapid population growth has transformed many grasslands and irrigated crop lands into suburban housing developments. An increasing number of property owners with acreages from 1 to 50 are finding threats to their chosen life style. Waste management, water quality control, noxious weed management, animal health, pasture management and conflicts with wildlife are all challenges to unprepared small acreage owners.*

*With the increasing numbers of urban citizens wielding political power at the county commission and legislative levels, the sustainability of a healthy agricultural industry and reasonable environmental regulations is increasingly difficult. Among agriculture producers there is a need to increase the use of consistent records for decision making, particularly in those areas related to the application of chemicals and pesticides or specific water management techniques. There are approximately three million acres of irrigated crop land in Colorado. Salt affected soils and challenges to water rights are increasing problems for communities and land owners.*

*Prairie dogs have been viewed as a major agricultural pest by landowners in Colorado. According to the Colorado Agricultural Statistics Service, about 1.5 million acres were occupied by prairie dogs in Colorado, and prairie dogs were estimated to cause about \$10 million of damage to agriculture. Over half the acreage and damage was attributed to black-tailed prairie dogs. Although black-tailed prairie dogs appear fairly abundant in Colorado, their populations have been significantly reduced across their historic range. Thus, environmental groups have petitioned the U.S. Fish and Wildlife Service to list the black-tailed prairie dog as a threatened species. With these conflicting values and needs, it is apparent that some prairie dog populations will need to be protected/preserved whereas others may need to be controlled to minimize conflicts.*

### **Overview of Goal IV for Program Year 2000**

Colorado's rapid growth (twice the national average and continuous growth for 10 years) has increased public concern about how environmental values can be promoted while maintaining economically viable agriculture. During the year 2000, growth management initiatives at the Legislature and in the general election reinforced concern about the dominance of agriculture's control of Colorado's water (85%). Increased concerns about pest management and endangered species legislation are impacting the state economy and local resources.

Particularly in light of the unique discipline integration in the Department of Bioagricultural Sciences and Pest Management, the Extension entomologists and plant pathologists have developed a strong integrative program which utilizes cross-discipline educational sessions to impact knowledge and practices in the state. With grain prices generally low during 2000, wise use of pesticides, fertilizers, and nutrient management decisions have become more critical to agricultural economic viability. Pest management information is provided in Master Gardener training, in ongoing field schools, producer learning groups, and specific workshops with small acreage owners and large acreage track managers.

During 1999, an intensive realignment of the state management and clarification of goals for the Master Gardener Program resulted in a clear set of objectives that included strong environmental impacts. During the year 2000, Master Gardener Volunteer Training Program leaders piloted a more experiential hands-on curriculum for teaching critical concepts in the Master Gardener Program. This resulted in more assertive and confident Master Gardener volunteers. We expect the impact they will have on the public will be greater than those volunteers trained with the previous model.

Noxious weed management in Colorado is becoming increasingly difficult with environmental concerns and local resource conflicts in managing the program. A significant outcome during the year 2000 was participation from the Colorado Seed Growers Association and representatives of the Horticulture Industry in the development of a new process for determining when a plant species should be declared noxious in Colorado. This change in structure for education and decision making is a significant advantage for Colorado's environment.

Ongoing work in the management of pests has resulted in a third update of the High Plains Integrated Pest Management Guide for Colorado, Nebraska, Montana, and Wyoming. In addition, ongoing work with Russian wheat aphid has influenced Colorado wheat producers so that 29% of our wheat acres are now planted in varieties resistant to Russian wheat aphid.

As we identified critical issues for Colorado in the year 2000, an ongoing concern is access and quality of water in the state. A task force from AES and CE was appointed to develop a strategic action plan for CSU's involvement in water outreach. As a result of that task force, we created a new state water outreach coordinator and have initiated processes for the better integration and translation of water research findings and recommended practices.

Ongoing work with the Big Thompson Watershed Forum which began in 1996 has involved key Civil Engineering Extension specialists in the design and implementation of a monitoring system that could provide a consistent sampling protocol, data analysis protocol, and reporting format in order to protect the quality of the Big Thompson Watershed located in northern Colorado. An interagency forum has encouraged flexible membership and a shared commitment to a joint monitoring and education effort. Data collected in 2000 and 2001 will begin to show where critical quality issues exist and increase the attention paid to protection measures.

Other water education efforts are funded by special grants in the Denver area and on the western slope. The new state water coordinator will allow us to better integrate the programs of these funded efforts and identify new sources of funding for ongoing water education and research in Colorado.

## **Plan of Work Review**

### ***Objective IV:***

- A. ***Increase the adoption of research based best management practices to control weeds, insects, disease and nematodes for wise use of agriculture chemicals and for ground water protection.***

***Projected Outputs:*** 1) Resource manuals and research summaries on pesticides, fertilizers, and nutrient management; 2) best management practices demonstrations; 3) field schools to education crop advisors and producers; 4) development of best management practice manuals for irrigated corn production, alfalfa, and legume production.

***Projected Outcomes:*** 1) Increased producer adoption of best management practices such as integrated management and biological controls developed with research in Colorado; 2) decrease in ground water nitrite levels; and 3) reduced crop loss and lower production costs due to weeds and pests.

## **Year-One Results**

### **Key Themes - Integrated Pest Management, Other: Invasive Species**

#### **Noxious Weed Management Outputs**

Three fundamental issues associated with noxious weed management lend themselves to research and education and in Colorado and elsewhere in the United States there is a distinct need to provide research-based information to answers these questions:

- a) why is it important to manage noxious weeds;
- b) how does one prioritize where to manage noxious weeds; and
- c) how should noxious weeds be managed?

In Colorado, a significant quantity of research is conducted to better understand the ecology of selected weeds species [e.g. Russian knapweed (*Acroptilon repens*), diffuse knapweed (*Centaurea diffusa*), and yellow toadflax (*Linaria vulgaris*)] to better advise clientele as to why it is important to manage noxious weeds and how to prioritize where to manage noxious weeds. Experiments are also conducted to develop integrated weed management systems that fit into the concept of successional weed management. Many more weed species are targeted for this kind of research in the Colorado program. The information derived from state research and the research from neighboring states, is

passed along to the public in written form such as CSU Cooperative Extension Fact Sheets or in face-to-face workshops and seminars. Educational presentations on “why, where, and how to manage noxious weeds” were presented in Colorado for this reporting period as follows:

- 10 to owners and managers of large tracts of land
- 8 to small-acreage owners

Educational presentations on the same subject given to multi-state and international audiences for the reporting period included:

- National Cattleman’s Beef Association--Cattleman’s College, Phoenix, Arizona
- Federal Interagency Noxious Weed Management School, Denver, Colo
- Western Society of Weed Science Noxious Weed Shortcourse, Loveland, Colo
- International Weed Science Society; session organizer and gave presentation “Educating Politicians and Decision Makers About Weeds,” Foz Do Iguassu, Brazil
- Southwest Noxious Weed Shortcourse, Farmington, NM
- Invasive Species Management Shortcourse for federal agencies, Shepherdstown, WV

Printed material developed:

- 2000 Herbicide Evaluation Report
- Book chapter on the biology and management of the biennial thistles -- musk thistle (*Carduus nutans*), Scotch thistle (*Onopordum acanthium* and *O. tauricum*), and bull thistle (*Cirsium vulgare*):  
Beck, K. George. 1999. Biennial thistles. p. 145-161. In R.L. Sheley and J.K. Petroff, eds. *Biology and Management of Noxious Rangeland Weeds*. Oregon State University Press, Corvallis, OR.

### **Weed Management Outcomes**

In response to increased interest and publicity concerning noxious weeds, a committee was formed in 2000 to address how plants are added to the statewide noxious weed list. Up until recently, the seed trade and horticultural industries have not paid much attention to the noxious weed issue. The designation of some species of concern as noxious weeds or potential noxious weeds that are sold by these entities, has stimulated their heightened interest to be part of the process. So an outcome was that the Colorado Seed Growers Association and representatives of the horticultural industry became fully engaged in developing a new process to determine whether particular plant species should be declared noxious in Colorado. The heightened interest is related to the educational efforts of the Extension noxious weed program.

About 31 counties have active programs to address noxious weed management for large-acreage landowners and large-acreage land managers (e.g. U.S. Forest Service, BLM, Colorado Division of Wildlife, Colorado State Parks, County Weed Districts, Colorado Dept. of Transportation). It is estimated that the agents in these counties spend about one day per week during the growing season on this issue.

### **Pest Management Outputs**

The major emphasis in this area has been the development and distribution of the High Plains Integrated Pest Management Guide for Colorado, Western Nebraska, Montana and Wyoming. Three annual updates have been distributed and parts of it are accessible on the Web. Other significant on-going activities include the crop clinics, field days, and, less frequently, integrated production guides.

The Colorado Wheat Production Handbook was produced in the year 2000 and distributed to more than 3000 users. The Colorado Wheat Administrative Committee is of the opinion that it is in the hands of all Colorado wheat producers with operations larger than 200 acres.

**Pest Management Outcomes**

Currently 29% of Colorado wheat acres are planted to varieties resistant to Russian wheat aphid.

**Linkages:** CSU departments of Bioagricultural Sciences and Pest Management, Soil and Crop Sciences and Chemical and Bioresource Engineering (Civil Engineering), state, regional, and county faculty; U.S. Forest Service, Bureau of Land Management, Colorado Division of Wildlife, Colorado State Parks, County Weed Districts, Colorado Dept. of Transportation, Colorado Department of Agriculture, Colorado Department Health and Environment, Colorado State Legislature, specific commodity groups, counterpart specialists and departments in western Nebraska, Wyoming and Montana.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** Multi-State with Montana, Nebraska, Arizona, and Wyoming.

**Integrated CE/AEA Work:** Ongoing research on projects on biological and ecological weed management and pest management practices (#221, 618 and 646) provides information to assist Extension educators and producers. Resources from CE: 1.3 FTEs.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	2.5	3	4	4	4	1,689,643
County FTE	1	6	2	3	4	918,612
Total FTE	3.5	9	6	7	8	2,608,255
Budget	317,929	417,936	539,307	615,858	692,409	

**Objective IV:**

**B. Increase the effective management of pests in agriculture systems and landscapes.**

**Projected Outputs:** 1) Electronic newsletter (pest alert); 2) web site; 3) fact sheets on pest management; 4) database of transportable digitized images for pest management education; 5) crop clinics; and 6) field schools.

**Projected Outcomes:** 1) Enhanced grower/crop consultant/master gardener understanding of the ecological and economic impact of pests on crop production; 2) increased use of non-chemical pest management alternatives; and 3) reduction in crop losses due to pests.

## **Year-One Results**

### **Key Theme - Integrated Pest Management**

#### **Management of Pests in Agricultural Systems Outputs**

The Cooperative Extension Program of the CSU Department of Bioagricultural Sciences and Pest Management (BSPM) is a multidisciplinary effort encompassing entomology, plant pathology and weed science. The department's Extension Program is devoted primarily to the application of disciplinary, scientifically-based knowledge to solving practical problems related to management of pests in agricultural systems. The combination of pest management disciplines provides unique opportunities to address critical issues that cut across disciplinary boundaries.

Outputs include:

- editing *Colorado Bean News* (16-page quarterly to 3,800 subscribers).
- the COAGMET--statewide network of remote electronic weather stations--weather data archive now has more than 10 years worth of data from many of the 35 reporting sites in Colorado.
- forecasting foliar diseases of crops including dry bean, onion, potato.
- providing IPM assistance for commercial vegetable crops including dry bean, onion, potato.
- an expanded and enhanced word-searchable database of 11,000 digitized agricultural images for easier access by specialists on campus, and during 2001 by agents throughout Colorado; the database is used in extension, teaching and research programs.
- application of modern technology (GPS hardware, GIS software) to improve disease survey efficiency and accuracy when scouting bean, onion and potato production systems for evidence of crop (volunteer) and pest overwintering in northeastern and southern Colorado.
- clientele access to daily weather data from more than 35 remote electronic weather stations located throughout Colorado, with current and archived data available on-line from the Colorado Climate Center.
- Internet ([www.csuag.com](http://www.csuag.com)) and satellite (DTN) reports are provided weekly of crop and pest status with BMP and IPM (VegNet) recommendations from specialists to agricultural clientele throughout May to September.
- annual support by all department specialists for numerous educational events such as field days and meetings, news releases, Extension fact sheet and bulletin development and updates; examples include the IPM Summer School at ARDEC; Bean Field Days at Idalia, Snyder & Berthoud; Onion Field Days at Brighton, Ault & Rocky Ford; educational meetings for commodity groups throughout the state; with a targeted audience total of more than 750 participants for these events.

**Management of Pests in Agricultural Systems Outcomes**

--the VegNet Pest & Crop Reporting System has provided Internet and DTN resources to clientele for more than five years now in support of crop and pest management decisions by clientele, with an emphasis upon the judicious use of pesticides only when justified by biological, environmental and economical inputs.

--During the 2000 cropping season, disease forecast models, pest surveys, and hot/dry weather conditions contributed to scattered and light disease outbreaks, which seldom warranted the use of fungicides by clientele throughout Colorado.

**Linkages:** CSU departments of Bioagricultural Sciences and Pest Management, Rangeland Ecosystem Science, Soil and Crop Sciences and Chemical and Bioresource Engineering, CSU College of Forestry, CSU Agricultural Experiment Station, and state, regional and county faculty; USDA-ARS, Colorado Climate Center, Colorado Department of Agriculture, Colorado Department Health and Environment, Colorado State Legislature, and specific commodity groups.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	6	4	8	8	9	3,765,489
County FTE	2	2	3	4	4	1,224,816
Total FTE	8	6	11	12	13	4,990,305
Budget	732,408	308,143	1,002,061	1,078,612	1,175,163	

**Objective IV:**

**B. Enhance wise soil management decision making.**

**Projected Outputs:** 1) Manure management plan workshops; 2) on-farm best management practice demonstrations; 3) field days; and 4) manure management publications.

**Projected Outcomes:** 1) Increase in number of land managers who base manure and fertilizer decision on soil testing; and 2) reduction of nitrate contamination.



## **Year-One Results**

### **Key Themes - Agricultural Waste Management, Soil Quality**

No report available for Year-One

**Linkages:** CSU departments of Soil and Crop Sciences, Bioagriculture Science and Pest Management and Food Science and Human Nutrition, CSU Master Gardener Program; Colorado Department of Agriculture, Colorado Department of Health and Environment, crop consultant groups, and green industry leaders and producers.

**Source of Federal Funds:** Smith-Lever, Hatch

**Scope of Impact:** State Specific

**Integrated CE/AES Work:** Ongoing research project (#685) to determine manured crop land evidence of salinity levels, nitrate leaching, and pest populations provides information for Extension educators on helping producers manage nutrient applications. Resources from CE: .3 FTE.

#### **Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1.5	1	2	3	3	1,110,337
County FTE	2.5	2	3	4	5	1,339,643
Total FTE	4.0	3	5	7	8	2,449,980
Budget	336,205	139,312	422,755	595,857	672,408	

#### ***Objective IV:***

**B. *Enhance adoption of research-based management practices in the green industry of Colorado.***

***Projected Outputs:*** Educational materials, including, 1) computer graphic slides; 2) Green Scene Newsletter; 3) PlantTalk Colorado message scripts; and 4) introductory level school at the Annual ProGreen Conference.

*Projected Outcomes: 1) Increased utilization by green industry members of CSU Extension research-based best management practice recommendations; 2) increase utilization of PlantTalk Colorado by members of the industry and their customers.*

## **Year-One Results**

### **Key Themes - Other: Urban Horticulture, Master Gardeners, Adult Education**

#### **Master Gardener Outputs**

In the Colorado Master Gardener Program, 1,500 volunteer staff donated 53,000 hours in service making 90,000 one-to-one contacts (plus contacts with group and media) as follows:

- 44% One-to-one office, phone and field contacts
- 20% Mass contacts at information booths: clinics at garden centers, garden shows, fairs.
- 11% Group contacts through classes & workshops
- 12% Community gardening and greening activities
- 3% Media: newspapers, TV, radio, and web
- 10% Program management

Seventeen percent of Colorado Master Gardeners are employed in the Green Industry. A significant portion of Colorado Master Gardener consulting is regarding pest management issues and plant care issues that directly impact pest problems. To enhance the Master Gardener capacity to serve the community, both county staff and volunteers identified “improved diagnostic skills” as the primary educational need. The traditional training program includes ten 6-hour lecture sessions. The Colorado Master Gardener curriculum was revised and strengthened, and then piloted with the objective of enhancing critical thinking skills related to diagnostic work.

This hands-on curriculum included 22, 3-hour blocks. Two blocks could be taught in a day, or a single block in an evening. Each block includes shorter lecture segments interspersed with a variety of student activities such as hands-on lab exercises or small group discussions (case studies and sample questions).

#### **Master Gardener Outcomes**

Compared to the traditional lecture, the hands-on teaching method resulted in a very different style of worker. With the hands-on training method, new Master Gardeners start with a confidence that they can tackle diagnostic problems. They willingly move forward when faced with a diagnostic process in their volunteer work. The novice Master Gardener routinely asks for assistance from staff or experienced MG, so the program must be prepared to provide this early-on mentoring. Through this teaching style and mentoring process the new Master Gardener falls into a fast-track for developing diagnostic skills.

By contrast, new Master Gardeners from the traditional lecture method are generally reluctant to tackle diagnostic problems. They are more comfortable watching someone else do it. When it comes to diagnosing a problem, they often don't know where to begin, and are significantly less likely to ask for help.

When it came to a broad understanding of the subject matter needed to function as Master Gardeners, neither teaching method was superior (as measured by comprehensive written exam on subject matter). While the hands-on method motivated interest in key topics, less material is covered in the class. Other observations from the hands-on curriculum include:

- The hands-on method stimulated interest in "seeking answers," resulting in an increased interest and commitment to the learning process.
- Younger to middle-age adults openly comment on their preference for the hands-on method. While the retired senior citizen population is typically more comfortable with a lecture style.
- The hands-on curriculum requires significantly more preparation time on the part of the instructor to prepare materials needed for lab exercises. Program delivery costs are also significantly higher due to materials needed for class.
- In the pilot project, a striking difference between weekday and evening students was observed. Students in the evening classes were highly motivated by the learning potential. They thrived on receiving "cutting-edge" information and using critical thinking skills as part of the curriculum. For the instructor, the evening class was a joy to teach, as students were extremely motivated. With learning/knowledge as a primary motivator, these Master Gardeners are in fast track to significantly expand the diagnostic service provided by the MG program.

These students take the evening class for personal enrichment time around their full-time job and family commitments. However, they have limited time to donate back to the program and almost no time during the traditional weekday. If expanding diagnostic services is a primary objective of the local Master Gardener Program, staff needs to look at allowing/creating outreach and training opportunities outside the traditional work-week. To nourish the volunteers' commitment, staff efforts should focus on learning opportunities that provide additional cutting-edge information and practice of critical thinking skills.

In contrast, students in the weekday classes are more motivated by the social experience. Learning of new or different concepts is secondary to enjoying the social interaction. In some counties, our Master Gardener program is very much a senior citizen program due to limitations put on by our weekday-only training and outreach activities.

If the objective is a large numbers of volunteers who can put in significant hours during the weekday, our volunteer pool will be predominately retired citizens. Primary motivators for these volunteers include sharing their present knowledge with others and enjoying the social interchange. Providing cutting-edge information and sharpening diagnostic skills will be secondary. Here improving diagnostic skills must be carefully folded into enjoyable activities.

Experience reveals that most programs need both types of volunteers, those with cutting-edge knowledge and diagnostic skills, and those available to support the "people" side of gardening activities.

**Linkages:** CSU departments of Horticulture and Landscape Architecture and Bioagriculture Science and Pest Management, Colorado State Forest Service; Colorado Department of Agriculture,

Denver Botanical Gardens, Denver Water District, Green Industry Executive Committee, Board, and members, Colorado Garden and Home Show, Colorado GreenCo.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific

**Integrated CE/AES work:** Ongoing research project (#713) on the selection, introduction and evaluation of landscape materials for the High Plains enables horticulture specialists and agents to make appropriate recommendations to producers. Resources from CE: .2 FTE.

Ongoing research project (#642) on technologies impacting waste water and fertilization needs in greenhouses provides technical recommendations for specialists and agents to share with members of the green industry in Colorado. Resources from CE: .5 FTE.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	3	2.5	4	4.5	4.5	1,882,445
County FTE	10	11	12	12	13	4,439,958
Total FTE	13	13.5	16	16.5	17.5	6,322,403
Budget	765,799	591,351	1,304,816	1,353,092	1,429,643	

**Objective IV:**

**E. Improve the rangeland management skills of Coloradans who manage public and private land.**

**Projected Outputs:** 1) Grazing management class for producers, agency personnel and environmentalists; 2) field days; and 3) educational seminars.

**Projected Outcomes:** 1) Colorado producers will implement grazing management plans appropriate for their operations; 2) environmental groups, government wildlife agencies, private land owners, and resource management owners will collaborate to improve grazing management to enhance resource conservation and protection, and wildlife and fishery management; 3) enhanced watershed hydrological functioning and improved quality of water resulting from better vegetation management practices; 4) Colorado producer adoption of integrated sustainable livestock, rangeland, crop land production systems.

## **Year-One Results**

### **Key Themes - Natural Resources Management, Drought Management**

#### **Range Management Outputs**

Range Management schools were conducted including one comprehensive grazing management school in Rocky Ford in the fall of 1999. Also continuing education efforts through three meetings of alumni from a previous school regarding range monitoring, cattle condition scoring, and range evaluation and grazing management. In the latter, a world renowned expert in the field from Hawaii was a presenter.

#### **Range Management Outcomes**

***Colorado producers will implement grazing management plans appropriate for their operations:*** Alumni of range management schools have been active participants in several of the drought management workshops and have adopted at least some of the practices recommended in the schools on their operations, including later calving seasons, early weaning and reduction of numbers because of drought, and rotational deferment of pastures to enhance productivity and reliability of the resource. One of these ranchers was quoted in an Ag Journal article about the drought emphasizing the need to reduce numbers to maintain profit and reduce financial risk rather than feeding more to livestock on drought stricken pastures.

Others have reported that they still have forage this fall to carry most of their cows through the winter while most of their neighbors are out of forage and are either selling more cattle or beginning to feed hay early. If the drought lasts for more than one year, it is anticipated that the alumni will be in proportionately better financial condition and have rangelands with proportionately greater productivity and wildlife populations than those that have not adopted these recommended practices. Another school is planned to begin in April of 2001.

The various presentations have increased awareness of different audiences including producers, agency personnel and academia of means to educate producers on the benefits and methods of improving grazing management. One of these presentations, given jointly at a national conference with Extension Agent Robbie Baird-LeValley and Extension Specialist Roy Roath, has solicited a grant proposal to obtain funding to allow the Regional Extension Specialist to teach a grazing management school in California. Several producers in southeastern and southwestern Colorado have also asked for assistance in implementing planned grazing management programs on their operations or in integrating livestock into their farming operations. As a result of a presentation made at a Soil Conservation District meeting in Holly, the Regional Extension Specialist was also asked to help train resource conservationists with the USDA-NRCS

***Environmental groups, government wildlife agencies, private land owners, and resource management owners will collaborate to improve grazing management to enhance resource conservation and protection, and wildlife and fishery management:*** Partly as a result of a presentation by Range Management Specialists at a joint meeting of the Colorado Cattlemen's

Association and the Colorado Section for the Society for Range Management, the CCA is investigating the formation and funding of a group to develop and produce advertisements for the media emphasizing the importance of good range stewardship and the role of livestock producers in fostering good rangeland health. Extension staff attended the first meeting of the committee formed to investigate these ideas and provided input on the vision, mission, goals and structure of this group.

***Enhanced watershed hydrological functioning and improved quality of water will result from better vegetation management practices:*** Drouth management workshops sponsored by the Western Center for Integrated Resource Management have better prepared livestock producers to take proactive measures to meet the challenges of the current drouth, mitigate its effects and thereby improve watershed function. Extension input helped get legislation introduced and passed in Colorado to facilitate the financing of conservation easements through the trading of tax credits. A group has now been formed in Otero County to develop strategies, a structure and funding to provide irrigated farmers with options other than direct sale of water rights to capitalize on their market value while keeping the rights in the county and the water in the Arkansas basin to the extent possible. The chairman of this committee solicited Extension's participation in formulating the vision, mission, goals, and structure of the Otero County Land Trust to acquire and administer these conservation easements.

Work with the Colorado Division of Wildlife and a group of public school educators in their Teaching Environmental Science Naturally (TEN) program helped give professional educators materials and methods to more effectively teach environmental science to youth, including the effects of different management practices on rangeland community productivity and watershed function.

***Colorado producer adoption of integrated sustainable livestock, rangeland, crop land production systems:*** One research project has yielded information on how livestock can most efficiently be used in small grain (e.g. wheat) farming operations as another profit center and the effects of different forms of supplementation on livestock performance in these systems. (Output: A master's thesis was generated as part of this research project. The Regional Extension Range Management Specialist is a member of the graduate committee, and the plan is to publish this research in a peer-reviewed journal.)

A demonstration of sheep grazing growing-season alfalfa has shown that, to be successfully grazed, bloat inhibitors must be used and daily moves are important in preventing animal losses and increasing animal performance. If possible, this demonstration will be continued in the coming year to further perfect a method to successfully harvest alfalfa directly with livestock as a means of cutting costs and improving profitability of an operation.

Applied research projects have yielded preliminary information regarding the influence of prairie dogs on short-grass prairie ecosystems and livestock operations dependent on them. Partly as a result of this research and other issues related to prairie dogs, Extension is working with members of the Bent - Prowers Cattle and Horse Growers to host a symposium for livestock producers and other community members regarding prairie dogs and their effects on shortgrass ecosystems and livestock operations.

**Linkages:** CSU departments of Rangeland Ecosystems Science, Fishery and Wildlife Biology and Animal Sciences, Integrated Resource Management Team, Cooperative Extension Southeast Regional staff; Colorado Department of Agriculture, Bureau of Land Management, Natural Resource Conservation Service, USDA Forest Service.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific

**Integrated CE/AES work:** An ongoing research project on management of weeds on range and pastureland (#759) provides technology transfer to Extension educators and land managers. Resources from CE: .20 FTE.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1.5	1.5	2	2	3	965,510
County FTE	2	2.5	3	3.5	3.5	1,109,990
Total FTE	3.5	4.0	5	3.5	6.5	2,075,500
Budget	297,929	188,147	422,755	461,031	557,582	

**Objective IV:**

**F. Creation of Prairie Dog Management Work Group to develop and implement a program that achieves conservation of the black-tailed prairie dog in Colorado while recognizing that control is necessary and appropriate in areas where prairie dogs conflict with agriculture and other human activities.**

**Projected Outputs:** Comprehensive work plan with specific tasks to accomplish: inventory and monitoring of existing black-tailed prairie dog populations in Colorado, criteria and procedures for identifying potentially unique or high-quality prairie dog colonies for protection, identification of unique prairie dog colonies, identification of incentives for landowners to protect important prairie dog colonies, establishment of a target acreage of occupied prairie dog habitat, and criteria for and identifying unoccupied potential prairie dog habitat in Colorado.

**Projected Outcomes:** Conservation of adequate populations of black-tailed prairie dogs in Colorado to negate their listing by the U.S. Fish and Wildlife Service as a

*threatened species. Agricultural producers will have greater flexibility in managing prairie dogs where they cause conflicts if they are not listed as a threatened species.*

## **Year-One Results**

### **Key Theme: Wildlife Management**

#### **Prairie Dog Management Work Group Outputs**

Black-tailed prairie dog populations have been greatly reduced from historic populations by conversion of prairie to agricultural land, control programs, and plague. During 1997, the National Wildlife Federation petitioned the U.S. Fish and Wildlife Service to list the black-tailed prairie dog as "Threatened." To preclude listing, biologists in Colorado and several other states have formed intra-state prairie dog conservation committees to address conservation of prairie dogs in their respective states. The efforts are intended to inventory and monitor prairie dog populations, provide incentives to conserve prairie dogs on some areas while allowing some control on areas where prairie dogs cause conflicts.

In Colorado, a Prairie Dog Management Work Group was formed and has met several times to develop prairie dog conservation criteria. Criteria was developed for identifying potentially unique or high-quality prairie dog colonies for protection. Through a contract to an environmental consulting firm, 214,000 acres of prairie dog colonies have been mapped in Colorado. There is a plan to conduct additional inventory work in the near future, and discussions have taken place about various ways to encourage landowners to conserve prairie dogs and what target acreages of prairie dogs might be for each state involved. To enhance this effort, the Colorado Division of Wildlife has set aside \$600,000 in an incentive program that will compensate landowners if they do not control prairie dogs. Extension specialists also have been pursuing strategies for compensating landowners to conserve prairie dogs through the Federal Conservation Reserve Program. Criteria has been developed for identifying unoccupied but potential prairie dog habitat in Colorado. An intra-state and federal prairie dog conservation coordinator has been hired. Colorado hosted a two-day meeting on prairie dog conservation which was attended by about 250 county, state, and federal governmental employees, agricultural producers, and other interested people. Several authorities on prairie dogs met to outline a book that they will be writing on prairie dog conservation.

In other range-management related work, applied research projects have yielded preliminary information regarding the influence of prairie dogs on short-grass prairie ecosystems and livestock operations dependent on them. Partly as a result of this research and other issues related to prairie dogs, Extension is working with members of the Bent-Prowers-County Cattle and Horse Growers to host a symposium for livestock producers and other community members regarding prairie dogs and their effects on shortgrass ecosystems and livestock operations.

**Linkages:** CSU departments of Fishery and Wildlife Biology and Biology; Colorado Farm Bureau, Colorado Cattlemen's Association, Colorado Division of Wildlife, Colorado Department of Agriculture, Colorado Department of Public Health and Environment, Colorado State Soil Conservation Board, Colorado State Board of Land Commissioners, USDA/APHIS Wildlife Services, U.S. Bureau



of Land Management, U.S. Department of Defense, U.S. Environmental Protection Agency, USDA Farm Services Administration, U.S. Fish and Wildlife Service, and U.S. Forest Service.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific

**Resources Allocated:**

	2000-01	2001-02	2002-03	\$ Equivalent
State FTE	.2	.2	.3	67,585
County FTE	.3	.8	1.2	176,066
Total FTE	.5	1.0	1.5	243,651
Budget	42,275	44,519	120,826	

***GOAL V: Enhanced economic opportunity and quality of life for Americans.***

*Issue: For many Coloradans improved quality of life is their most important goal and that potential has attracted many people into the state. Economic opportunities in the tourism industry and the technology related industries also have attracted people. The Extension program challenges, resulting from this rapid and targeted growth, include building community connections and decision-making processes so that change can be planned for. In addition, families need to keep a work and relationship balance which nurtures all members of the family in a rapidly changing environment.*

*Young people have many opportunities for recreation and participation in the fast-paced media related world. Yet, the high employment and rapid change creates real deficits in maintaining community social capital, family cohesion, and effective decision-making structures for controversial challenges. Building the capacity of our Extension system to engage in public policy education, focus leadership in key environmental conflicts, and support investments in youth and families will take a deliberate and comprehensive strategic plan.*

**Overview of Goal V for Program Year 2000**

Colorado continues to be a state with a highly educated population, rapid growth, and evidence of stress in both youth and adults. With the rapid growth in the communities, it is critical that we support efforts to enhance the ability of communities to dialogue about critical issues and support local leadership in providing input to decisions in the political and economic process.

A major effort has been focused over the last two years to educate Extension faculty and collaborating professionals on how to use the asset framework for identifying youth contributions to communities and how communities can be more supportive to building assets in youth. One major outcome of this effort has been an adoption of the asset language by our youth faculty and a greater confidence in the conceptual basis of their programming efforts.

Colorado is a state that is highly sensitive to issues of youth and family violence following the Columbine tragedy. During the November general election, citizens voted - in a new initiative requiring background checks for gun purchasers at local gun shows. There is an ongoing coalition that continues to advocate for changes in gun control regulations in Colorado. Following the Columbine tragedy, a task force of Extension faculty developed a list of resources that could be used for prevention efforts in Extension programs. Many of these resources were already in our system or known to some state specialists, but not widely identified by county faculty. This theme of youth violence is ongoing within the Colorado Extension system as evidenced by the professional development training planned for winter of 2001. The National Issues Forum model was utilized to teach community facilitation, and the community problem identified and worked on was youth violence.

Colorado continues to have strong outcomes from the anger management curriculum RETHINK. We are currently providing this training in a number of other states throughout the country. The outcomes show a reduction in self reported use of violence by parents and an increase in their understanding of alternative anger management techniques.

A continuation of the concern for youth violence is seen in our ongoing program on Partnerships for Community Safety (funded by the Department of Justice and Cooperative Extension). This program is a community problem-solving process whereby issues of public safety are discussed in an inter-generational multi-agency environment. Repeatedly, issues of youth behavior including youth violence, youth vandalism, driving while intoxicated, etc., are identified as key concerns for communities. A number of specific community projects have been initiated utilizing the strengths of the community network developed during the problem identification process.

Colorado communities continue to show dramatic contrasts between those with rapid growth and those experiencing population loss or extremely slow growth. The Engaging Communities in Transition base program continues to support community choices in visioning their future and planning their transitions. An extremely diverse coalition of public and private groups has resulted in the implementation of a number of community-building curricula. The Internet Masters Program has enhanced the availability of internet education in rural areas and a variety of efforts have involved community members in planning for the protection of open space and the recruitment and retention of businesses in their community. Creative efforts such as Westland: The Workshop curriculum and a public access cable television channel in one county Extension office are pilot examples to motivate other communities.

Following the forest fires experienced in the summer of 2000 in Colorado, an interagency planning group is working toward an entrepreneurial agriculture and forestry interagency conference which will highlight businesses and forest management education opportunities for both systems.

## Plan of Work Review

### *Objective V:*

- F. *To integrate the Youth as Assets framework into all youth development programs with an emphasis on developing life-long skills.*

*Projected Outputs:* 1) Newsletter articles clarifying the assets model for 4-H leaders and other youth professionals; 2) development of materials and in-service experiential learning opportunities for 4-H youth faculty, other youth volunteers, and professionals

*Projected Outcomes:* 1) 4-H youth leaders and other youth professionals will begin to integrate youth as asset language into their planning and programming activities; 2) youth can name positive assets which create resiliency and encourage positive contributing behaviors; 3) youth take more responsible leadership positions within their own organizations; 4) youth initiate plans for community service and identify leadership opportunities for themselves and others in their community.

## Year-One Results

### **Key Themes - Character/Ethics Education, Youth Development/4-H**

#### **4-H Developmental Asset Infusion Project Outputs**

The 4-H Developmental Asset Infusion Project is a two-year grant funded program. The primary objective of the grant is to make all of those working with 4-H aware of the asset framework and encourage them to incorporate asset-building principles into their programs. To do this, newsletters and other literature have contained asset information. Numerous workshops for 4-H Extension Agents and community members have been presented as well as responding to individual requests.

--Newsletter Articles:

*Leader Line* is a newsletter for 4-H staff and adult organization leader published three times a year with a circulation of 2500.

*Leader Line* December 1999 - Developmental Assets - A Paradigm Shift

*Leader Line* April 2000 - Asset #34: Cultural Competence

*Leader Line* August 2000 - Celebrating 4-H Youth's Abundant Assets

*Update* is a weekly one-page publication that is sent to all county offices, Extension staff and administration, and adults and youth 4-H Senate members.

*Update* "Asset Quick Tips": There were 28 quick tips covering topics such as Youth as Resources to Reclaiming the Neighborhood.

--Presentations:

4-H Western Roundup - January 8, 2000. 70 youth attended two 90 minute workshops introducing the Asset and Character Counts information.

2000 4-H Leadership Development Conference - February 6, 2000. An half hour introduction to the Assets for 250 youth and leaders.

February In Service - February 23, 2000. Patsy Roybal from Assets for Colorado Youth and Katy Kohnen Colorado Assets Coordinator presented an advanced two-hour training to 20 extension agents.

Five day-long presentations combining Character Counts and Assets by 4-H Specialist Dale Leidheiser and Colorado Assets Coordinator Katy Kohnen.

Durango 4/25/00 to 11 adults and 10 youth

Gunnison 4/27/00 to 15 adults

Eagle 4/28/00 to 15 adults

Pueblo 5/12/00 to 8 adults

Pagosa Spring 9/1/00 to 21 Junior High Teachers

Western Regional Teen Leadership Conference - June 24, 2000. An hour and one half presentation to 63 youth.

2000 Colorado State 4-H Conference - June 26, 2000. A team building exercise to the 12 senators.

2000 Colorado State 4-H Conference- June 28, 2000. Workshop for 20 youth.

### **Developmental Asset Infusion Project Outcomes**

As workers dedicated to youth, 4-H agents and volunteers search for ways to demonstrate the positive impact of their programs upon children and adolescents. They want to know that what they are doing makes a difference. This, coupled with demands for outcome data by funders, challenges agents and volunteers to find ways to evaluate program benefits. With a state initiative to spread the Search Institute's 40 Developmental Assets throughout Colorado, 4-H leaders and agents are infusing the assets into their programs and are using the Asset Checklist as an educational and evaluation tool. It is an easy way to introduce the 40 Developmental Assets because one question corresponds to each asset.

Workshop participants can check the answers that best fit them.

Examples of questions measuring Assets include:

- I receive high levels of love and support from family members.
- I am given useful roles in my community.
- I can stand up for what I believe.

Seven large groups of 4-H youth (n=354) completed the checklist. These youth represent the best of Colorado and the western region's youth. Groups surveyed included from Western Regional 4-H Teen Leadership Camp, Western Regional 4-H Roundup, the Colorado State Fair Fashion Review delegation, Colorado State 4-H Conference and Colorado 4-H Senate. (June 1999 through June 2000.)

Although the checklist is not intended, nor appropriate, as a scientific measurement of developmental assets, the results are important to examine. The graph below shows a compilation of

data for the eight Asset categories used in the checklists compared to a national survey of almost 100,000 youth conducted by the Search Institute [www.search-institute.org](http://www.search-institute.org).

When comparing the two surveys, 4-H participants reported that they have an average of 32 assets while the youth who participated in the National Assets survey averaged 18. 4-H youth report significantly more Assets in each category than the participants in the national survey. The largest difference is in the Social Competencies category where 49 percent more 4-H’ers report having those assets than the national average. These assets include planning and decision making, interpersonal competency, and resistance skills. The smallest difference between 4-H and the national survey is in the Boundaries and Expectations category. These include assets such as schools and neighborhoods providing clear rules, and consequences and parents, adults and friends modeling positive responsible behavior.

There are two perplexing responses to the individual assets checklist questions where the 4-H youth average was the same or less than the national survey.

	<b>4-H Avg.</b>	<b>Nat. Avg.</b>	
			I serve in the community one hour or more each week.
	29%	46%	50%
Neighbors take responsibility for monitoring my behavior.	29%	46%	

Our assumption has been that youth enrolled in 4-H community clubs participate in community service activities at a rate greater than the national average. The difference in community service isn’t statistically significant considering the Asset Checklist is not a scientific survey. However, one of the most emphasized components of 4-H is the role of youth involvement in citizenship and community. If that is important, why are these exceptional youth reporting that they are doing essentially the same or less than those in the national survey? Some agents suggest that the youth are participating in many community service projects, but the activity is not identified as such, or the young people don’t realize the hours they donate are equivalent to an hour or more per week.

4-H youth discussed their responses about neighbors taking responsibility for monitoring their behavior during the workshops. Youth often explained that they didn’t have neighbors as many live in rural areas with the next home or farm a couple of miles away. Rewording the question, and replacing “neighbors” with “community members” may have resulted in a different response. The validity of this question needs to be researched.

**Conclusion:** The approach is a paradigm shift, focusing on positive factors – assets – in children’s lives. This survey demonstrates that these 4-H youth are getting much of what they need to grow up successfully. We celebrate the ways that 4-H contributes to building assets in their lives. The results of this survey offer opportunities for discussion. For example, how do we build assets in youth who are not supported or involved in the 4-H community club program? In the 4-H tradition, the checklist acknowledges the skills that 4-H youth are gaining to make them successful adults.

**Linkages:** 4-H Youth Development, CSU departments of Human Development and Family Studies, Social Work and School of Education; CSU Family- Youth Institute; Colorado Trust, Colorado State Department of Education, and Assets for Colorado Youth, Search Institute (Minnesota).

**Source of Funds:** Extramural and Smith Lever

**Scope of Impact:** State Specific

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	.5*	.5*	1	2	2	482,755
County FTE	2	3	3	4	4	1,224,816
Total FTE	2.5	3.5	4	6	6	1,707,571
Budget	153,102	152,942	326,204	499,306	499,306	

\* Extramural funding

**Objective V:**

**B. Enhance the ability of Colorado parents to control their own anger and react with appropriate guidance to their young persons.**

**Projected Outputs:** 1) Trainer of trainers program for RETHINK; 2) ongoing research updates and reviews for county faculty; 3) adaptation of RETHINK for specialized targeted audiences.

**Projected Outcomes:** 1) Parents and youth will report reduction in anger levels and expression of physical or psychological violence; 2) increase in parent use of appropriate developmental guidance techniques; 3) pro-active community requests for anger management for adolescents and parents.

**Year-One Results**

**Key Themes - Conflict Management, Parenting, Communications Skills**

**ReThink Anger Management Program Outputs**

The Colorado ReThink Team consists of two Colorado State University Cooperative Extension Agents (Carol J. Schultz and Margaret Miller) and an Extension State Specialist (Robert J. Fetsch). The Colorado ReThink Team has trained 31 Extension Agents from 38 Colorado counties to teach ReThink Parenting and Anger Management and Teen ReThink effectively and to collect program impacts. Eight CSUCE agents provided usable program impact data.

The Colorado ReThink Team has trained 720 ReThink teachers from 17 states--AZ, CA, CO, IL, IN, KS, MI, MO, MT, ND, NE, NV, OH, SD, UT, WA, and WY.

The Colorado ReThink Team has provided 12 full-day or longer in-service trainings and research updates for Extension Agents and other professionals in Colorado plus six full-day in-service trainings out of state--KS, SD, MI, MO, CA, and OH.

**ReThink Anger Management Program Outcomes**

Family Life Specialists at CSU and the University of Wyoming collaborated in obtaining funding to search for and evaluate effective Couple Violence Prevention Programs. They found 300 unique prevention educational programs. Only 8 percent (N=24/300) were found to have some empirical evidence of program effectiveness.

Most recently the Colorado ReThink Team adapted ReThink especially for farm and ranch and rural parents. Regarding outcomes: Parents and teens reported statistically significant reductions in their anger levels. Parents reported statistically significant reductions in their violence levels. Parents reported statistically significant reductions in their family conflict levels. Parents reported statistically significant reductions in their negative personal belief levels. Parents reported statistically significant reductions in their trait anger levels. Parents reported statistically significant reductions in their overall anger expression levels. Parents reported statistically significant improvements in their rational -empathic anger management levels.

**Linkages:** Specialists and faculty in CSU Department of Human Development and Family Studies, county Extension faculty; Colorado Department of Social Services and Colorado Department of Education.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** Multi-State with Arizona, California, Colorado, Illinois, Indiana, Kansas, Michigan, Missouri, Montana, North Dakota, Nebraska, Nevada, Ohio, South Dakota, Utah, Washington, and Wyoming.

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1	1.5	1.5	2	2	772,408
County FTE	3	4	4	5	5	1,607,571
Total FTE	4	5.5	5.5	7	7	2,379,979
Budget	326,204	250,611	451,031	575,858	575,858	

**Objective V:**

**C. Enhance the ability of Colorado communities and citizens to prevent youth violence.**

**Projected Outputs:** 1) Development of a resource database to provide youth and family professionals with materials for teaching specific violence prevention skills; 2) clearly communicated administrative support for the importance of the key strategies to prevent violence in young people and in communities; 3) skill development training for Extension professionals and youth and family professionals in other organizations on topics such as “Recognizing Vulnerable Youth,” “Defusing Anger,” “Responsive Communication Techniques,” and “Mentoring and Supporting Young People;” 4) training for communities in the “Community Problem Solving Model”.

**Outcomes:** 1) Increased active use of violence prevention curricula and experiential learning among 4-H volunteers and youth professionals in Colorado; 2) development of active problem-solving committees led by youth in selected Colorado schools; 3) enhanced adult/youth collaborative learning projects; 4) increased recognition of Cooperative Extension as a violence prevention/youth as assets resource for other organizations; and 5) increased number of active Extension Community Policing Projects.

## **Year-One Results**

### **Key Themes - Conflict Management, Other: Violence Prevention**

#### **Partnerships for Community Safety (Community Policing) Outputs**

Colorado State University Cooperative Extension has joined in partnership with the Colorado Regional Community Policing Institute (CRCPI) -- Colorado Division of Criminal Justice to mobilize communities in building effective crime prevention partnerships. Through this partnership, community safety programs were infused into local Cooperative Extension efforts, a new community problem - solving curriculum (Partnerships for Community Safety) and additional resources were developed, community and project evaluations were conducted, new local and state partnerships were established, University faculty and students were engaged to assist in applying research to community issues, and community groups continue to design projects that meet their needs. Communities have developed partnerships that have provided realistic solutions to real problems, such as teen drinking and driving, lack of positive gathering places for youth, or speeding in a downtown business area. The partnerships have been effective in building local and state networks to address critical public safety needs.

#### **“Columbine Task Force” Outputs**

CSU Cooperative Extension also established the “Columbine Task Force” in response to the Columbine High School Tragedy. The Task Force identified research-based and effective curricula that they recommended to Extension Agents and other youth and family professionals for teaching specific violence-prevention skills. The Task Force also provided specific recommendations for skill - development training for Extension professionals and other youth and family professionals. Extension administrators (Mary Gray, Associate Director, Programs) provided resources and speakers on



"Recognizing Vulnerable Youth," etc. Family Life State Specialists at CSU and the University of Wyoming collaborated in obtaining funding to search for and evaluate effective youth violence -prevention programs. They found 380 unique youth - violence -prevention programs. Only 6 percent (N = 23/380) were found to be both obviously research -based and programmatically effective. For more details, the reader is referred to [http://www.nmfr.org/violence/yvp\\_litrev.html](http://www.nmfr.org/violence/yvp_litrev.html)

### **Youth Violence-Prevention Outputs**

A resource database was developed to provide youth and family professionals with materials for teaching specific violence prevention skills.

--CSU Department of Sociology developed a searchable database that has over 1,400 entries regarding community policing projects around the country. The database is accessible to youth and family professionals through the PCS Project Coordinator or the CSU Department of Sociology.

-- A partnership was established with CSU Department of Sociology that will continue to maintain the database, conduct research of community public safety issues, and provide student internships.

Administration clearly communicated support for the importance of the key strategies to prevent violence in young people and in communities.

-- A team of CSU Extension and University faculty representing a variety of expertise was established to design a project model that increased the capacity of state Extension field faculty to know and collaborate with law enforcement in addressing public safety issues.

Skill -development training was provided for Extension professionals and youth and family professionals in other organizations on topics such as "Recognizing Vulnerable Youth," "Defusing Anger," "Responsive Communication Techniques," and "Mentoring and Supporting Young People."

-- Twenty Extension professionals and other youth/family professionals attended a three - day "Facilitation Skills" training provided by PCS project staff and consultants.

-- Twelve Extension professionals attended a half day in -service training introducing the PCS project. The training included community policing concepts and the problem - solving model.

--40 Extension professionals attended a half - day in -service training coordinated through the 4 -H Youth Development Program related to youth gangs and Cooperative Extension's role in urban youth development programs.

Training was provided for communities in the "Community Problem Solving Model."

--150 community representatives attended the Partnerships for Community Safety (PCS) training provided in eight Colorado communities.

### **Youth Violence Prevention Outcomes**

Active use of violence prevention curricula and experiential learning was increased among 4 -H volunteers and youth professionals in Colorado.

-- A PCS curriculum was developed including a Facilitator Guide and a Participant Workbook; the curriculum covers the basics of community policing, building partnerships, and facilitating a community's ability to solve problems, and developing community action plans to resolve public safety issues.

Active problem -solving committees lead by youth were developed in selected Colorado schools.

-- Youth participated in six of the eight communities that conducted the PCS training.

Adult/youth collaborative learning projects were enhanced.

-- Youth in four PCS communities were actively involved in follow-up community-action planning and implementing of identified strategies to resolve their public safety issues.

Cooperative Extension received increased recognition as a violence-prevention/youth-as-assets resource for other organizations.

--New working relationships were developed with the following state agencies:

Department of Public Health-Division of Intervention and Prevention for Children and Youth; Build A Generation-Office of Juvenile Justice and Delinquency Prevention; Colorado Community Restorative Justice Forum-Colorado Department of Justice; Alcohol and Drug Abuse Division - Department of Human Services; Rocky Mountain Center for Health Promotion and Education-Prevention Project.

The number of active Extension Community Policing Projects across the state increased.

--Eight communities that conducted the PCS training continue to be active in community policing, working together with law enforcement, local government, citizens and youth to carry out their action plans, identify and secure additional resources, and respond to their public safety issues. (Mesa, Weld, Lake, Eagle, Baca, Bent (2), and Summit)

--Three additional metro communities continue their community policing activities through the support of the Neighborhood Resource Center and local Extension Agents. (Douglas, Boulder, Denver)

--A statewide Extension Gerontology Team developed a partnership with law enforcement and the Colorado Attorney General's Office in addressing senior fraud issues. Through this partnership they promoted a video-training program for financial institutions.

**Linkages:** CSU departments of Human Development and Family Studies, Sociology, Social Work and Health and Exercise Science; CSU Family and Youth Institute, CSU Service Learning Program, 4-H Youth Development, CSU School of Education; Colorado Attorney General's office, Colorado Governor's office, Colorado Department of Education, Colorado Department of Social Services, Colorado Community Policing Institute, Colorado Department of Public Health --Division of Intervention and Prevention for Children and Youth, Build A Generation Program -Office of Juvenile Justice Programs, Colorado Community Restorative Justice Forum-Colorado Department of Justice; Alcohol and Drug Abuse Division -Department of Human Services, Rocky Mountain Center for Health Promotion and Education-Prevention Project.

**Source of Federal Funds:** U.S. Department of Justice, Smith Lever

**Scope of Impact:** State Specific

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1	2	2	3	3	1,062,061
County FTE	2	3	4	4	5	1,377,918

Total FTE	3	5	6	7	8	2,439,979
Budget	249,653	236,981	499,306	595,857	672,408	

\*Community Policing programming is funded through a grant from the U.S. Department of Justice.

**Objective V:**

**D. Enhance the quality of youth and family serving programs in Colorado and create more supportive policies in areas affecting youth and families.**

*Projected Outputs:* Continued development of the Family and Youth Institute to provide policy education, research collaboration, youth and family professional education, and social and economic analysis of trends affecting Colorado’s family and youth.

*Projected Outcomes:* 1) New interdisciplinary collaborations on the Colorado State University campus in research and programming affecting families and youth; 2) increased understanding of socio-economic trends and cross-ethnic and assimilation challenges affecting youth and families and strategic planning initiated by communities and organizations which reflect these trends; 3) enhanced skills in developing, implementing, and evaluating appropriate programs for Colorado’s families and youth; 4) increase in external funding to increase institutional capacity for research, policy education and professional development.

**Year-One Results**

**Key Themes - Children, Youth & Families At Risk, Parenting Youth Development/4-H**

No Report Available for Year-One

**Linkages:** CSU College of Applied Human Sciences, College of Agriculture, College of Liberal Arts, Colorado Agricultural Experiment Station, county Extension faculty; Colorado Department of Education, Colorado State Department of Social Services, Colorado Governor’s Office, Colorado County Commissioners, Colorado State Legislature, multiple agency and organizational leaders.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1	2	3	3	5	1,351,714
County FTE	1	2	2	3	3	852,061
Total FTE	2	5	6	8	9	2,193,775
Budget	249,653	346,204	442,755	519,306	615,857	

**Objective V:**

**E. Increase rural economic diversification with special emphasis on existing business retention/expansion, small and home-based business emphasizing value-added agriculture, eco-tourism, forestry, and appropriate technologies and business/community mutual support.**

*Projected Outputs: 1) Training for community teams in economic diversification models, 2) electronic communication to share new opportunities for economic development and funding, 3) workshops and web sites providing guidelines for eco-tourism and fisheries and wildlife economic opportunities.*

*Projected Outcomes: 1) Jobs created by enhanced business expansion or new businesses; 2) improved business planning for realistic business success; 3) improved business/community collaborative work for long-range economic development.*

**Year-One Results**

**Key Themes - Community Development, Impact of Change on Rural Communities, Jobs/Employment, Other: Business Retention/Expansion**

**Engaging Communities in Transition and Center for Rural Assistance Outputs**

Colorado State University Cooperative Extension engaged in a variety of efforts related to economic diversification and associated business/community mutual support efforts regarding local capacity-building, civic volunteerism, and issues involving shifting economic bases and accompanying changes in land-use patterns. Following are ten examples illustrating the range of multi-state, state and local work during 1999-2000. Most are built on a strong foundation of previous initiatives and collaboration with many partners.

--Communities in Economic Transition/Connecting Communities in Transition international dissemination workshop & follow-through;

--New Gates through Old Fences initiative to add value to agriculture, forestry, business and community, with statewide planning for 2001 Entrepreneurial Agriculture and Forestry interagency conference;

- CE2000 Participant Study completed; results show importance of Colorado's emerging civic and economic challenges, and stakeholder support for CSU-CE work in these areas;
- WestLand: the Workshop-- a community simulation to stimulate civic learning and non-divisive discussion, designed for a diverse group of citizens to consider information, engage in decision-making, see consequences of private-public land use, economic and natural resource decisions, reflect on the experience, and discuss how ideas and insights from the simulation can be used in real life;
- The Colorado Internet Masters Program -- an educational and civic volunteer program which offers tools for Coloradans to "surf the net," access local-to-global information resources, keep competitive in job markets, and advertise area businesses and community groups;
- Extension staff support for various county and regional level projects regarding land use issues, including preservation of open space & historical places, ways to increase agricultural and ranch profitability, and a land use training academy for lay citizens is operational in Summit County;
- Sedgwick County Extension-- work with local and corporate partners to create a state-of-the-art computer lab that will eventually be hooked up to the statewide Multi-use Network;
- Dolores County Extension operates DC-TV (a public access cable channel), which with help from 4-H youth and other volunteers, broadcasts listings, news and updates on local community/business events;
- Business retention/expansion program support in Morgan County, by Extension's NE regional specialist and county staff;
- Professional development sessions and electronic communication-informational support for staff, partnering agencies and civic leaders

### **Economic Diversification, Community/Business Support Outputs**

- Several hundred sets of informational/educational materials distributed;
- More than a dozen intensive workshops and courses involving 250 participants offered in local/regional and international sites, all with strongly positive participant evaluations; several more are in planning stages;
- More than 30 volunteer trainers/facilitators intensively trained to multiply program-related efforts in future years;
- Wider involvement of CSU-CE staff and agency partners in professional development sessions;
- Dozens of interagency and citizen-leader planning and informational sessions held;
- Youth representatives involved in some local working groups;
- Seven e-mail listservs sponsored by CRA/CSU-CE supported hundreds of informational/educational messages and encouraged information exchange among 400+ agency professionals and local leaders; additional support for listservs in other states, and a UAZ value-added website

### **Economic Diversification, Community/Business Support Outcomes**

- Workshop and course evaluations show participants gained skills and insights and plan to put these to use for personal, employment/business and civic use;
- Local task forces are working on economic diversification, these and others on related land-use planning efforts;

- Several entrepreneurial agricultural partnerships and cooperatives are evident, some new and some on-going;
- Agricultural producers and townspeople involved in WestLand: the Workshop report greater understanding of private and public land use and agricultural decision-making, and improved local communications;
- Civic volunteers taught other residents about Internet use, and built websites for businesses and non-profit organizations;
- Phase I of a local technology learning and meeting laboratory was completed;
- Local citizens and agency professionals involved in CE educational activities also are participating in county/regional economic and land use development-related meetings and hearings;
- Expanded interagency groups are planning additional joint-efforts to support communities and their diversification work;
- Anecdotal reports from members show listserv support to be useful and appreciated; many events have been planned in part through electronic and conference call communications, with hundreds of hours of travel time and related costs saved in the process.

**Linkages:** Center for Rural Assistance; Engaging Communities in Transition On-Going Program state team with its county/regional/campus-based membership; CSU-CE county staff--especially in Custer, Dolores, Logan, Morgan, Routt, Sedgwick, Summit, Weld counties and specialists in NW and NE regions; Sustaining Agriculture and Environment On-Going Program state team; CSU departments of Agricultural and Resource Economics, Design and Merchandising, Fishery and Wildlife Biology and Human Development and Family Studies; 4-H Citizen Washington Focus; Colorado Rural Development Council; USDA/CSREES/Land-Grant University Communities in Economic Transition Pilot Project; Colorado Department of Agriculture; Colorado State Forest Service; USDA-NRCS and RC&D's; USDA-FSA; US Forest Service; Colorado Small Business Development Centers; Colorado Rural Technology Academy; Colorado Department of Local Affairs; Colorado Open Space; Colorado's "Bean-Pole" Technology Grants Fund; Sedgwick County Technology Board; Montana State University Extension; University of Minnesota Extension; Western Rural Development Center; University of Wyoming Extension and WY Rural Development Council; local economic development organizations; Colorado's Region 9 Economic Development; Colorado Community College system; local public libraries; local Internet Service Providers; American Farmland Trust; Rocky Mountain Elk Foundation; Lucent Technology/EduQuest; the Rural Wide Web; local business leaders.

**Source of Federal Funds:** Smith-Lever

**Scope of Impact:** State Specific and Multi-State with Montana, Minnesota and Wyoming

**Resources Allocated:**

	1999-00	2000-01	2001-02	2002-03	2003-04	\$Equivalent
State FTE	1.5	1.5	2	2.5	3	965,510
County FTE	3	2	3	4	5	1,224,912

Total FTE	<b>4.5</b>	3.5	5	6.5	8	2,190,422
Budget	249,653	167,325	422,755	547,582	672,408	

## **B. Stakeholder Input Process**

Following the submission of our four - year Plan of Work in 1999, Colorado instituted a joint Cooperative Extension/Agricultural Experiment Station stakeholder input process. The process includes two parts. We will continue to receive annual critiques and input on our Plans of Work from our State Extension Advisory Committee and from County Advisory Committees. This is an ongoing process whereby critiques and requests are funneled through county faculty to regional directors and discussed at regional meetings on an annual basis.

In addition, we have instituted annual stakeholders’ meetings in at least two separate regions of the state. During the year 2000, meetings were held in the northwest and southeast regions. For the northwest region, the Extension regional director invited an audience that included county commissioners, key members of local Extension County Advisory Committees, staff and advisory committee members from the Agricultural Experiment Stations, and other identified community leaders. Following presentations on current programming issues by Agricultural Experiment Station and Cooperative Extension administrators, exemplary regional Extension programs were highlighted. All attendees then completed a survey to identify their high priority concerns for research and Extension (*See survey and 2000 data, Appendix A*).

The second stakeholder meeting was held in the southeast region of the state at the conclusion of a day - long Experiment Station Advisory Committee meeting. Invitations were issued to key community leaders and announcements were placed in local papers inviting people to attend and discuss CSU Experiment Station and Cooperative Extension resources and program responses in the area. This group also completed the survey to establish priorities for research and Extension.

An analysis of the results from these two groups (n=77) showed that stakeholders rated concern for individual issues more important for the community than for their own family. On a five -point scale from 1 to 5, out of 28 issues, those with a mean score above 4.0 were the following:

1. Farm and ranch profitability/sustainability
2. Value-added processing of agricultural and forest products; value-added enterprises
3. Population pressure on ag lands, natural resources and communities; land -use planning

4. Small acreage management of crops/livestock, natural resources
5. Public land-use restrictions; human wildlife conflicts; grazing permits; weeds
6. Crop production systems
7. Environmental concerns with ag chemicals and fertilizers; municipal and industrial wastes
8. Water resources--quantity and quality
9. Adequate jobs; income; diversification; workforce
10. Public-private rights/responsibilities, zoning and land use
11. Telecommunications in rural areas
12. Ability of citizens to work together in solving mutual problems
13. Youth character building and preparation for civic roles

This stakeholder input confirmed priorities that emerged from five regional meetings held during spring, 2000. Ordering these stakeholder priorities from most to least important would show the following:

- A. Water quality and quantity concerns
- B. The ability of citizens to work together to solve local problems
- C. Population pressures on ag lands, natural resources, and community/land -use planning and management
- D. Farm and ranch profitability/sustainability
- E. Youth character building and preparation for civic roles

Out of the regional meetings, key issues for Colorado were organized into four Critical Issue Teams:  
 Workforce/Labor Force  
 Addressing Growth Decisions  
 Community Commitment to Families and Youth  
 Biotechnology

Based on the stakeholder input and regional meetings, the Addressing Growth Decisions Critical Issue Team created subcommittees that included natural resources, water quality and quantity, small acreage management, and policy process and decisions. This Critical Issue Team is managed by a group of Extension state specialists and county faculty along with other CSU faculty with interest and expertise in this area. The Critical Issue Team, Community Commitment to Families and Youth, has a primary concern-- youth and family representatives in leadership positions for communities. This team will develop specific programs dealing with the enhancement of community leadership and meaningful involvement of youth and families in community decision processes.

Support for these priorities from regional meetings and by stakeholder groups resulted in the joint funding of two initiatives from AES and CE. The first initiative empowered a task force to develop a strategic plan for Colorado State University's water outreach efforts. Members of the task force included county, regional, and state faculty. A focus group process with key members of the water management and advocacy groups in the state and a series of deliberative meetings by the task force resulted in a Strategic Plan for Water Outreach and Research 2000-2015 (See Appendix B). We are beginning the



implementation process of this task force report, including the hiring of a statewide water outreach coordinator and the integration of water research and education information.

The second initiative was farm and ranch sustainability and this has resulted in a joint AES/CE funded project to develop a web-based decision tool for agricultural lenders and producers based on an analysis of a large Colorado database. Through collaboration with Farm Credit Services, the largest regional office in Colorado shared their database on loans outstanding to a variety of producers and ranchers in Colorado. This database analysis will provide decision rules for future risk management challenges and enhance a web-site education process for managing of risk in Colorado agriculture. Initial analyses of these databases has lead to a predictive model for decisions. The current database will be enhanced with information from two other regional farm credit services offices.

A review of other stakeholder issues that scored at least 4.0 or above has reinforced efforts already begun with our Internet Masters Volunteer Development Program and our Small Acreage Program Development Team.

## C. Program Review

The program review process has not changed since the submission in 1999. We are currently talking with the Ag Experiment Station regarding some joint program review processes based on our joint development of a program accountability system.

## D. Evaluation of the Success of Multi & Joint Activities

**Multistate Projects** - As shown in the attached table, Colorado State University Extension faculty are engaged in a great variety of multistate activities largely focused on the immediate high plains states or in the western region. The activities can be organized around our ongoing Program of Work Teams and provide additional resources and synergy in high quality programming and research.

**Sustaining Agriculture and the Environment** - A number of multistate projects are dealing with economic viability of agriculture. The Risk and Resilience in Agriculture program staff in collaboration with colleagues from Montana and Wyoming have completed a research study of risk management practices utilized by producers. They have identified the need for education on more effective practices and they are currently working with the state of Kansas in developing a joint proposal to continue this risk management education. The multistate activities related to livestock, specifically the Lamb Marketing Cooperative work and the ongoing programs in Economic Diseases of Sheep, reflect the need to create new structures for production and marketing. Competition from Australia, in particular, has deeply affected the western states' wool and lamb production. State specialists working collaboratively with Kansas, Wyoming, Idaho, Montana, South Dakota, and Utah received funding to develop a more effective marketing cooperative that would service much of the western regions.

The work on Amenity Values on Agricultural Lands conservation is part of an ongoing effort in Colorado and Wyoming, to preserve agricultural productive land and open-space in critical areas being impacted by new population growth. Colorado, Utah, and Wyoming have been collaborating on a Certified Greenhouse Professional program which brings combined expertise to a high quality training curriculum. The Green Industry in Colorado is the fastest growing portion of the agriculture gate and there is a great need for well-trained professionals working in the field. In addition, most greenhouse operators experience a high turnover of employees, therefore management needs to provide consistent education on the recommended practices used in their business. This collaborative effort has increased employee effectiveness.

The Sustainable Agriculture collaboration with New Mexico is encouraging the pursuit of new niche markets and lower input production. With Colorado State University located in the northern region of Colorado and New Mexico State at the southern region of that state, our regional research stations and county Extension faculty along the borders make effective use of collaboration for a series of workshops and ongoing joint projects. The Resources to Help Farmers Connect with Direct Marketing is a research and development project with Hawaii, California, Idaho, and Oregon. Information from those states has been used to help develop materials to educate producers about locally available markets. This project has received strong support from a variety of sectors of the community.

Several other projects affecting the economic viability of agriculture relate to policy and participation in the development of standards or programs to guide best management practices. Examples are the National Confined Animal Feeding Policy Task Force and the Western Confined Animal Feeding Operations project.

**Enhancing Families and Communities** - Several projects have brought multistate strengths to this ongoing program area. The Dare to Be You Family and Community Resiliency Program has provided training for a number of states across the county. In addition, they work actively in the four corners area of Utah, New Mexico, Arizona, and on the Navajo Nation and Mountain Ute Reservation. This is an ongoing education and research project with special expertise in cultural relativity and impow erment.

The Rethink Parenting and Anger Management and Teen Rethink Project has provided ongoing training opportunities in other states. Our training team provides assistance in data analysis from impacts of this parenting project. In addition, we receive feedback to enhance our curriculum models. The Teen Rethink Project has emerged out of our initial work with older parents. This adaptation is now utilized in at least four other states.

The Family and Youth at Risk Project links our family comm unity centers with resources in the national network. In particular, resources from states also engaged in work with Spanish speaking audiences have been utilized to enhance the work in both pilot locations in Colorado.

**Enhancing Communities in Transition** - The community development projects are active, particularly in the four corners area. Colorado communities were linked directly with a community in another state for sharing creative economic development in small communities. The New Gates Through Old Fences provided excellent opportunities to work with neighboring states in planning joint programs that include forestry, agriculture, and community projects.

In general, the multistate projects which seem most successful are those with our immediat e bordering states where compelling economic interests and geography/climate similarities provide shared challenges that are being jointly met.

In addition to the specific projects listed in the table and described above, Colorado State University Cooperative Extension committed many resources to hosting the National 4 - H Development Conference in Denver and in supporting the National Western Youth Development Program. Both of these events are demanding in management, but also provide ric h opportunities for educational sharing.

### Multi-State Activities

<b>Title of Planned Program/Activity</b>	<b>Colorado FTEs Involved</b>	<b>Cooperating States</b>
Risk and Resilience in Agriculture Program	45 days	Colorado, Montana Wyoming
High Plains Integrated Pest Management Guide	20 days	Colorado, Montana, Western Nebraska, Wyoming
Economic Diseases of Sheep Seminar	3 days	Colorado, Kansas
Support of Lamb Marketing Cooperative and Breeding Management Program	25 days	Colorado, Wyoming
Mountain States Lamb Cooperative Genetic and Technical Committee	6 days	Colorado, Idaho, Montana, South Dakota, Utah, Wyoming
Communities in Economic Transition/ Connecting Communities in Transition Program	24 days	Colorado, Arizona, New Mexico, Oklahoma, Texas, Utah
New Gates Through Old Fences--Adding Value to Agriculture, Forestry and Community Programs	4 days 15 days	Colorado, Arizona, New Mexico, Oklahoma, Texas, Utah, Wyoming
Western Extension-Farm Foundation Community Resource Development Committee Project	5 days	Western Region States
Western Rural Development Center Advisory Group	3 days	Western Region States
Journal of Extension Editorial Board	6 days	All states
National Workforce Preparation Conference	1 day	All states
Dare to Be You (Family/Community Resiliency) Program	1.0 FTE-spec 2.5 FTE-county	Colorado, Arizona, New Mexico, Utah (Navajo Nation & Ute Mountain Ute Community))

Certified Greenhouse Professional Program	69 days-spec 38 days-project specific staff	Colorado, Utah, Wyoming
Western Society of Weed Science Noxious Weed Management Shortcourse	8 days	Colorado, Arizona, California, Montana, New Mexico, Utah, Wyoming
Southwest Noxious Weed Shortcourse	4 days	Colorado, Arizona, New Mexico, Utah, Wyoming,
National Weed Science Conservation Training	9 days	Colorado, California, Maryland, Michigan, New Jersey, New York, North Dakota, Washington, West Virginia, plus others
Coordinated Agricultural Water Quality Program for EPA Region VIII	45 days	Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming
Sustainable Agriculture Using Alternative Methods Program	90 days	Colorado, New Mexico
Sharing Resources to Help Connect Farmers to Direct Marketing Niches	3 days 3 days	Colorado, California, Hawaii, Idaho, Oregon
Rethink Parenting & Anger Management, & Teen Rethink Project	52 days-Colo team	Colorado, Arizona, California, Illinois, Indiana, Kansas, Michigan, Missouri, Montana, North Dakota, Nebraska, Nevada, Ohio, South Dakota, Utah, Washington, Wyoming
Economics of Intensive Cropping Rotations in Dryland Production Systems	20 days	Colorado, Kansas, Nebraska
Children, Youth and Families at Risk Project	6 days	All states
Western Confined Animal Feeding Operations Project	7 days	Colorado, Hawaii, Oregon, Utah, Washington
National Animal Confinement Policy Task Force	2 days	Colorado, Iowa, Kansas, New York, Ohio, Pennsylvania, South Carolina, Texas

Western Rural Development Center Young Professional's Workshop	5 days	Colorado, Arizona, Idaho, Nevada, Utah, Washington, Wyoming
Western Extension Committee on Public Policy	14 days	Colorado, Alaska, Hawaii, Idaho, Nevada, Oregon, Utah, Washington,
National Public Policy Education Committee	14 days	Colorado, Alaska, Georgia, Iowa, Maryland, Nebraska, New York, Oklahoma, Ohio, Texas, West Virginia, Wyoming
Impacts of Amenity Values on Agricultural Lands Conservation	14 days	Colorado, Wyoming
National 4-H Youth Development Conference	? FTEs	Colorado, Idaho, Oregon [All states and territories participated]
National Western Youth Development Program	? FTEs	Western states [33 states participated]

**Integrated Joint Projects or AES/CE Activities** - In general, the greatest success in integrated activities has occurred at the Regional Experiment Station Centers where regional and county Extension faculty are collaborators and among state faculty who have AES research projects with direct and immediate application to Extension educational programs. Examples of these include our ongoing work in precision agriculture which involved personnel from the Departments of Soil and Crop Sciences, Bioag Sciences and Pest Management, and researchers from other systems. Local Extension faculty are involved with the cooperators on this research site. Ongoing field days, demonstrations, and new decision models have emerged from these joint efforts.

Another area of strong joint impact is from programs in water quality and quantity. Ongoing research on a variety of practices to reduce salinity in the Arkansas River Valley has resulted in a strong collaborative among a variety of natural resource and agricultural agencies and ongoing demonstration plots at a variety of locations in the southeast region. Within the Department of Civil Engineering the agricultural engineers focus on water quality/quantity and access as a major integrated effort in both research and Extension.

Strong success is seen in the integrated programs in the San Luis Valley where AES and CE faculty contribute to the development of seed potato cultivars and production techniques to enhance the profitability of that industry. Ongoing work in the Green Industry with both turf managers and in commercial greenhouses has yielded seed varieties more appropriate to Colorado climate and more efficient irrigation practices in both of these environments.

A high priority ongoing nutrient management project has been jointly funded by Extension/research at the Experiment Station located just north of Fort Collins. This interdisciplinary project is both a demonstration and research development project with important implications for livestock and cropping systems in Colorado.

A final area where we are seeing strong success is that in Range Management. Extension specialists with joint AES appointments and one specialist with an appointment in the Colorado Division of Wildlife have been identifying wise range management procedures based on native plants and careful timing of pasture use.

With 22 Extension faculty holding joint appointments with the Ag Experiment Station ongoing research results can be effectively presented in Extension programs.



## E. Multistate Extension Activities

**U.S. Department of Agriculture**  
**Cooperative State Research, Education, and Extension Service**  
**Supplement to the Annual Report of Accomplishments and Results**  
**Multistate Extension Activities and Integrated Activities**  
**(Attach Brief Summaries)**

Institution Colorado State University  
 State Colorado

Check one:     **Multistate Extension Activities**  
                    **Integrated Activities (Hatch Act Funds)**  
                    **Integrated Activities (Smith -Lever Act Funds)**

	Actual Expenditures
Title of Planned Program/Activity	FY 2000
<u>See Attached Description and</u>	<u>\$278,010</u>
<u>Table</u>	
<b>Total</b> _____	

Milan A. Rewerts \_\_\_\_\_                      March 7, 2001 \_\_\_\_\_  
 Director    Date

Form CSREES-REPT (2/00)

**F. Integrated Activities**

**U.S. Department of Agriculture  
Cooperative State Research, Education, and Extension Service  
Supplement to the Annual Report of Accomplishments and Results  
Multistate Extension Activities and Integrated Activities  
(Attach Brief Summaries)**

Institution Colorado State University  
State Colorado

Check one:  Multistate Extension Activities  
 Integrated Activities (Hatch Act Funds)  
 Integrated Activities (Smith -Lever Act Funds)

Title of Planned Program/Activity	Actual Expenditures FY 2000
<u>See Attached Summary and the Planned Programs Report</u>	<u>\$387,152</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Total \_\_\_\_\_

Milan A. Rewerts \_\_\_\_\_  
Director

March 7, 2001 \_\_\_\_\_  
Date

**APPENDIX A**  
**Stakeholder Input Meeting**  
**1999-2000**

Rocky Ford-December 14, 1999

	Importance in 5 Years									
	For Your Own Personal/Family Well-Being					For the Well-Being of Your Community, Our State				
	<u>Little</u>				<u>Great</u>	<u>Little</u>				<u>Great</u>
<b>Challenges:</b>	1	2	3	4	5	1	2	3	4	5
<b><i>Agriculture &amp; Natural Resources...</i></b>										
<i>Farm &amp; ranch profitability/sustainability</i>										
<i>Value-added processing of raw agricultural &amp; forest products; value-added enterprise development</i>										
<i>Small-acreage management of crop/livestock, natural &amp; horticultural resources--esp. on tracts 35 acres or less</i>										
<i>Population pressure on agricultural lands, natural resources &amp; communities; land use planning/management</i>										
<i>Public lands; human-wildlife conflicts; grazing permits; weeds; use restrictions</i>										
<i>Livestock production--management systems; marketing.</i>										
<i>Livestock waste management; odor; water quality</i>										

<i>Crop production--management systems, marketing, profitability</i>										
<i>Environmental concerns with ag chemicals &amp; fertilizers; municipal and industrial wastes on ag land</i>										
<i>Private land management issues--weeds, grazing; riparian areas</i>										
<i>Green industry--nurseries, parks, golf courses, turf, horticulture</i>										
<i>Water resources—quantity and quality, salinity, contamination</i>										
<i>Endangered species; impact on ag production/land use</i>										
<i>Alternative enterprises for farms &amp; ranches; hunting; B &amp; B; other recreation; aquaculture</i>										
<b>Civic...</b>										
<i>Adequate jobs, income; economic diversification; workforce preparation</i>										
<i>Adequate local revenue for public services, facilities</i>										
<i>Balancing of public-private rights/responsibilities, zoning and land use</i>										
<i>Access to reliable information via computer, e.g., internet</i>										
<i>Telecommunications availability in rural areas; business and education uses</i>										
<i>Ability of citizens to work together to solve mutual problems</i>										
<i>Anger management; violence prevention in public and private settings</i>										
<b>Family &amp; Consumer...</b>										
<i>Family relationships, parenting skills</i>										

<i>Informed consumers, family financial management</i>										
<i>Food safety, healthy diets, sound health practices</i>										
<i>Youth character-building &amp; life-skills; preparation for family, student, work, and civic roles/responsibilities</i>										
<i>Adequate/affordable housing &amp; health care</i>										
<i>Income disparity, welfare reform</i>										
<i>Dependent care; children and elderly</i>										

*Other concerns and issues*

- 1.
- 2.
- 3.
- 4.
- 5.

**Respondent information:**

**Gender:**  Male  Female    **Age:**  under 25     age 25-44     age 45-64     age 65 or over

**Place of residence:**     a farm or ranch     open country (not farm or ranch)     town under 2,500  
 town of 2,500-9,999     town of 10,000-49,999     town of 50,000 +

**Profession:**     Agriculture & related business     Small business     Human services  
 Industry & technology     Government



## Appendix B

### Summary Strategic Plan for Water Outreach and Research

Colorado State University  
Cooperative Extension  
Agricultural Experiment Station

The administration of CSU's Cooperative Extension (CE) and Agricultural Experiment Station (AES) launched a strategic planning effort during 1999 - 20000 to determine the future outreach and research needs for water resources programming directed by these agencies.

An internal committee consisting of CE specialists and agents and AES researchers developed recommendations for improving the effectiveness of CSU's outreach and research activities. As part of the planning process, this internal committee solicited input from an external group selected to represent Colorado's diverse community of water professionals. The external panel gave their views on past and future efforts by CE and AES in water resources programming. Emphasis was placed on future outreach and research priorities that would best meet state needs with respect to clientele served and critical issues addressed. In addition, both groups considered the potential impact of future social, political, and technological trends on future priorities for water resources programs.

#### Vision

The strategic planning committee attempted to look 15 years out to envision how CSU's water outreach programs should be structured and how our resources should be allocated to meet the growing needs for water education in Colorado. Our **vision** for water outreach and research programs is that:

**CSU will be the leader in the region for education, research, and outreach regarding agricultural and urban water uses and natural resource water needs. The Colorado water community will look to CSU for leadership and technical support in resolving water resource issues. Colorado citizens will look to CSU for clarification of key water issues as they develop. CSU is uniquely qualified to perform these roles by virtue of the breadth and depth of its water resources programs.**

#### Programs and Mission

This strategic plan was commissioned specifically to determine the roles of CE and the AES in water outreach and research in Colorado. The internal strategic planning committee attempted to look at the entire scope of CSU's water faculty and resources in formulating a unified mission for water outreach and research, while accepting that the organization will always contain a wide diversity of goals, programs, and organizational units. Within this context, our **mission** is that:

**CSU teaching, research, and extension faculty will provide high-quality educational programs and information to help Colorado citizens understand water uses and consequences, resolve water conflicts, protect water quality, conserve water resources, and manage the ecological health of our watersheds. Research faculty will engage in basic and mission-oriented research that will enhance our understanding of water resources, improve water management, and provide for the information needs of outreach programs. Cooperative Extension faculty will coordinate the water outreach programs of the University by facilitating local needs assessments and educational programs.**

## **Key Strategies**

To implement this vision and mission, two key strategies are proposed. The first emphasizes water resources education and outreach, and the second focuses on water research programs of the AES.

### ***Key Strategy 1: Water Resources Education and Outreach***

Goal: Provide leadership for internal water education programs and collaborate with outside agencies to improve the effectiveness of water education programs throughout Colorado.

Overview: CSU traditionally has played a key role in meeting the state's water information needs, particularly in the area of agricultural water use. But as society changes, new needs in water outreach and education are emerging. As the state's Land Grant Institution, the University is strategically positioned to respond to these needs, but specific initiatives must account for changes in the clientele being served and evolution in the issues involved. In response to this complex array of demands, the University acknowledges the need to engage in greater involvement with stakeholder groups and agencies within the state and become more involved in public issues affecting the administration and management of the state's water resources. Future trends identified in the strategic planning process that will change water information needs include rapid population growth, changing public values, and increased competition for limited water resources.

#### **Strategy Element 1.1: Provide for water education needs of Extension Agents and other CSU personnel involved in outreach programs.**

Activities:

1. Initiate an annual water short-course focused primarily on the water information needs of Extension Agents, but available to other CSU personnel such as new faculty working in agriculture and natural resources disciplines.
2. Initiate and maintain a web-based catalog or directory of existing water information and data relevant to Colorado.



3. Increase visibility of CE water information by dual -listing existing Fact sheets on water under a new topic heading of “Water.” Develop new Fact sheets under this topic on subjects related to water policy and law, water conservation, urban water use, water quantity issues, water terminology, and small -acreage water use.
4. Develop white papers to address specific water issues of broad public interest.

**Strategy Element 1.2: Initiate a Water Leadership Program for Colorado.**

Activities:

1. Develop a grant proposal to obtain initial funding for the planning, development, and initiation of a state Water Leadership Program.
2. Initiate planning for a Water Leadership Program.
3. Initiate a development campaign to permanently fund a Water Leadership Program.

**Strategy Element 1.3: Enhance collaboration with outside agencies to coordinate water education programs directed toward the general public.**

Activities:

1. Establish contacts with other agencies and groups involved in water education programs.
2. Acquire appropriate publications produced by outside agencies and groups for distribution through CSU’s Extension network.
3. Initiate and maintain a web-based catalog or directory of existing water information and data relevant to Colorado.
4. Develop white papers to address specific water issues of broad public interest.
5. Assign faculty representation at key water boards and commissions.
6. Encourage CSU faculty attendance at state water meetings sponsored by outside agencies.

**Strategy Element 1.4: Improve delivery of outreach programs directed toward agricultural, urban landscape, and small acreage water uses.**

Activities:

1. Initiate and maintain a web-based catalog or directory of existing water information and data relevant to Colorado.
2. Require outreach objectives in all proposed AES water projects.
3. Require CE faculty involvement in all proposed AES water projects.
4. Encourage support for funding of Water Center relocation to Glover Building.
5. Encourage continued participation by CSU faculty in the strategic planning effort of the Green Industries of Colorado Water Task Force.

**Key Strategy 2: Water Resources Research in Agriculture and Horticulture**

Goal: Promote active research programs related to agricultural and urban water use that will provide critical information required by various water constituencies.

Overview: Irrigated agriculture uses the greatest fraction of water resources in the state. As competition for limited water supplies increases, the information required for improvements in agricultural water management and urban horticultural water uses will intensify. Historically, the AES has been very active in its support of water resources research. In the future, water information from basic and mission-oriented research programs will be essential in meeting the public's needs for understanding water uses and consequences, resolving water conflicts, protecting water quality, conserving water resources, and managing the ecological health of the state's watersheds.

**Strategy Element 2.1: Enhance the effectiveness and visibility of AES-funded water resources research.**

Activities:

1. Establish internal competitive grants program in water resources with initial research priorities based on strategic planning feedback.
2. Appoint PI's of AES water projects to serve on Water Working Group.

3. Encourage support for funding of Water Center relocation to Glover Building.

**Strategy Element 2.2: Develop systems for determining water research priorities.**

Activities:

1. Conduct annual review of water research needs using feedback from AES and CE faculty and the Water Center.

2. Obtain input from state water leaders on water research priorities developed from internal review.
3. Screen all proposed AES water projects for relevance to current priorities.

**Strategy Element 2.3: Improve linkages between AES and Cooperative Extension.**

Activities:

1. Require all proposed AES water projects to include a meaningful outreach component.
2. Require all proposed AES water projects to identify a formalized linkage with one or more Cooperative Extension faculty.
3. Designate a specific pool of AES and CE funds to jointly sponsor the specific outreach activities of the AES projects identified in items 1 and 2.

**Staffing Requirements to Implement Key Strategies**

1. Cooperative Extension should staff a Regional Water Resource Specialist in each of the 5 regions, plus **one state-level Water Resource Specialist** to respond to a diverse array of water concerns at the local level such as agricultural and urban water use, wildlife water needs, water supply and quality, and public policy.
2. New or redirected staff time is needed to produce the synthesis material and the web based catalogs of water resource materials.
3. New or redirected staff time is needed to achieve the public interface and facilitation objectives of Strategy Element 1.3.
4. No changes in current AES staffing patterns are recommended. However, as research priorities evolve, new expertise will likely become involved in AES projects.

**Facilities/Programmatic Initiatives to Implement Key Strategies**

1. Create a centrally co-located, on-campus Water Center/CWRI office that would house Extension Water Specialists and Water Center staff. A location near the newly

created water plaza would be ideal due to centrality and proximity to Engineering, Agriculture, and Natural Resources faculty.

2. The formation of a water working group is recommended. This group, lead by a core team consisting of the CE State Water Resource Specialist, an appointed (by the AES Director on a rotational basis) AES faculty, and the Director of the Water Center, will be the focal point of water outreach and AES research activities at CSU. The water working group will consist of a group of appointed (by CE and AES Directors) campus and county faculty who represent the water needs of the state of Colorado. This group will serve to identify research priorities, outreach needs, and act as a catalyst for grant proposal teams.
3. The core team of the water working group should be given responsibility for the organization and management of the state Water Leadership Program (Strategy Element 1.2).

### **Media Requirements for Implementing Key Strategies**

- ▶ Digital information available via Internet is the most in-demand media for water information. Digital materials can be formatted to print on demand to save print and distribution costs. Distance education via web conferencing, satellite downlinks, and TV can effectively reach new and under-served clientele needs, further expanding the University's outreach impact.
- ▶ The Water Center Newsletter, "Colorado Water" is currently disseminating information for water professionals and could be enhanced to serve a much wider audience if CE and AES resources were committed. Including more non-technical water information aimed at the general public and decision makers could make this newsletter the premier water communication vehicle in Colorado.
- ▶ A new Extension fact sheet series dedicated to water is needed within the CE publications catalog to provide more focus and accessibility to water information.
- ▶ **Appendix**

