# 2012 University of Vermont Combined Research and Extension Plan of Work

**Status: Accepted**

**Date Accepted: 05/19/2011**

## I. Plan Overview

### 1. Brief Summary about Plan Of Work

Extension Faculty and staff at the University of Vermont Extension (UVM Extension) and faculty and staff at the Agricultural Experiment Station (VT-AES) are focused on meeting the needs of the state's citizens. These experienced and innovative professionals continually work to integrate higher education, research and outreach services to protect and enhance a quality of life characterized by a thriving natural environment, a strong sense of community, and a deeply rooted connection to agriculture. Though our research conclusions offer lessons nationwide, even globally, UVM Extension and the VT-AES apply the results closer to home, in our own communities, helping people where they live, cultivating healthy communities.

Today, VT-AES and UVM Extension address issues ranging from farm profitability, water and soil quality, and dairy herd disease resistance and health, to global climate change, renewable energy, youth life skills education, community development and planning, and obesity, nutrition and health. Together we concentrate on relevant research that helps our diverse audience--including farmers, forest and land stewards, children and families, rural community members--improve business profitability, environment, economics, nutrition, food safety, and youth and adult life-skills development.

Our work is guided and evaluated by dedicated citizen advisors with whom we meet regularly to review priorities, spending, and program impact. We seek additional feedback from those attending UVM Extension events, an annual state-wide poll, and we meet with university, local, state and national opinion leaders, and policymakers to review our research and outreach portfolio and direction. Research and outreach efforts are enhanced through active partnerships, and volunteer workers.

The State of Vermont is going through tough economic times which directly affect the University of Vermont's 2009 budget. This required UVM Extension to show how it would address a 5.75% budget cut. A one half time staff position was eliminated and three other staff positions were reduced in time. Beginning with the 2010 academic year UVM Extension is hiring a new faculty position and is refilling two faculty positions. A fourth faculty position may also be filled in the 2010 academic year contingent upon budget considerations. The college of Agriculture and Life Sciences has an MOU with UVM Extension that will increase the level of accountability for funds expended by the college in support of their outreach work across the state. The combination of new faculty hires and the MOU with the college will result in some programming shifts to best serve the priority needs of Vermont's citizens. Stakeholder input will be a significant part of that discussion and discussions to come.

The goal of UVM Extension and VT-AES is to put our health, environment, and agricultural research into action resulting in improved agriculture and environmental sustainability, human health, community development and the personal and intellectual development of youth.

**Estimated Number of Professional FTEs/SYs total in the State.**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 53.0 | 0.0 | 19.8 | 0.0 |

**Estimated Number of Professional FTEs/SYs total in the State.**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2013 | 53.0 | 0.0 | 20.5 | 0.0 |
| 2014 | 53.0 | 0.0 | 20.5 | 0.0 |
| 2015 | 53.0 | 0.0 | 20.5 | 0.0 |
| 2016 | 53.0 | 0.0 | 20.5 | 0.0 |

## II. Merit Review Process

### 1. The Merit Review Process that will be Employed during the 5-Year POW Cycle

- ☐ Internal University Panel
- ☑ External University Panel
- ☐ External Non-University Panel
- ☐ Combined External and Internal University Panel
- ☐ Combined External and Internal University External Non-University Panel
- ☑ Expert Peer Review
- ☐ Other

### 2. Brief Explanation

The University of Vermont Extension and VT-AES have entered into a formal agreement with Extension in Maine, New Hampshire, and Massachusetts to develop and implement a four-state planning and reporting system. Working in collaboration with three other states in developing our system has also resulted in discussions around state and regional programs, opportunities for multistate work, sharing staff resources and a much better understanding of how each of our unique programs are similar and different than others in New England.

As a result, the four states have agreed to provide merit review for each state as part of our formal partnership. The new system provides access to each state plan of work for all four states, allowing for easy sharing of ideas and opportunities for further collaboration. Further, we've agreed to set up a rotating system of more comprehensive merit review by selecting a different state plan each year for in-depth review by Extension staff from the other three states. With this system, we will be sharing plans with one another continuously, and every four years every state's plan will go through a more rigorous review process by the other three states.

## III. Evaluation of Multis & Joint Activities

**1. How will the planned programs address the critical issues of strategic importance, including those identified by the stakeholders?**

In Vermont, our issues of strategic importance include agricultural profitability and diversity; developing rural economics, niche product development; environmental quality, and a healthy and productive population.

We work to help people understand the range of programs we provide and our connection to the knowledge-base of UVM faculty. It is a priority to focus on addressing selected critical problems in Vermont, so VT-AES research and UVM Extension programs yield the greatest impact.

Citizens serve in advisory capacities to ensure that educational programming is targeted and relevant to areas that are important to Vermonters. Working collaboratively, and with other departments of the University, UVM Extension and VT-AES strive to strengthen efforts to ensure that research results, and educational resources remain accessible and relevant to the state's citizens. Advisors are the organizations continual check-in to aid us in focusing our work on the relevant problems. Further input is garnered from program participants and other stakeholders giving immediate feedback to a projects focus.

Additionally, UVM's Centers of Excellence help to coordinate, conduct and promote much of the research that is supported by AES funds, competitive private and public grants, sponsorships, and donations. These centers also utilize citizen advisory boards to inform and guide a research and outreach agenda that is responsive to local, state, and national needs and priorities. The Centers of Excellence include:

- Center for Sustainable Agriculture--an interdisciplinary approach to integrating university and community expertise to promote sustainable farming systems throughout Vermont and the region.
- Center for Rural Studies--connecting information and technical expertise with communities, businesses and policy makers in researching rural issues and information dissemination.
- Proctor Maple Research Center--applied research in the production of maple sap and syrup.
- Dairy Center of Excellence--a new initiative to allow VT-AES to work in tandem with Vermont farms and state and agriculture leaders to tailor research to better serve Vermonters. Some of the research will be conducted in Vermont towns and farms allowing closer relationships and increased research relevancy. It is envisioned to expand this initiative to create a consortium of Northeast universities with similar vision.

**2. How will the planned programs address the needs of under-served and under-represented populations of the State(s)?**

**Global Food:** : Agriculture is a struggling industry, its workers are at risk and entering into the business with needed supports can be a challenge especially for some audiences, especially women. Limited resources for children, families and seniors can limit access to local foods. Program examples follow:

- Growing Connections: a program for at-risk youth that teaches nutrition, food safety, and food security issues through gardening
- Senior Farm Share Nutrition Programs: nutrition workshop for low-income seniors to increase

their consumption of local, fresh produce by enhancing participants skills to prepare fresh fruits and vegetables and gain nutritional knowledge based on the Dietary Guidelines
• Local Foods: enhance the amount of locally grown produce that is consumed by Vermonters with limited resources and sold by small scale Vermont producers
• Women's Agricultural Network: provide educational and technical assistance to individuals starting or expanding agricultural businesses; targeted primarily and women
• Migrant Ed, Vermont AgrAbility, and Rural and Agricultural VocRehab: while focusing on building community capacity to meet these underserved populations, migrant workers and disabled farmers, they focus on the agriculture community.
• Private/commercial landowner and industry professional Education: Presentation at flower show for visually challenged , articles, media and website address gardening needs of seniors and those physically challenged.

**Childhood Obesity**
• Healthy Eating: targeted at increasing the amount of fruits and vegetable offered to toddlers by parents enrolled in WIC (Women, Infants, Children)

**Youth & community development**
Addresses community strengths and challenges, focusing programs to build assets through its citizens who may be of limited resources, a community struggling to thrive, migrant workers and disabled workers wanting to stay in the workforce. Program examples follow:
• Migrant Education Recruitment Program (MEP): ensure that children of migrant farm workers, and qualifying youth under age 22, are aware of the educational support services available to them
• Vermont AgrAbility Project: make recommendations that can be used by farmers with disabilities to maintain employment,through development of accommodations in support of recommendations made
• Rural and Agricultural VocRehab Program: assist individuals with disabilities living in rural areas and those in agricultural professions or self-employment, by providing them with a variety of services tailored to their needs in order to maintain or obtain their selected employment outcome
• 4-H: delivers educational programs to all youth developing life skills, with extra effort in place to target urban cities and activities for the teen audience as well as limited resource families and youth who are at-risk .In January of 2009 an Operation Military Kids (OMK) program coordinator was hired to target youth with parents in the military.

**Urban NPS Pollution**
• Youth Team Water Quality youth camps works 3 schools serving special needs students.

**Food Safety**

- Good Agricultural Practices program to support local farmers so they continue to sell fresh local agricultural products to local outlets and institutional users.
- Food Safety program in small food operations ensure a high level of confidence in locally processed products.

In addition scholarships are available to those wishing to participate in Extension programs, but do not have necessary resources.

**3. How will the planned programs describe the expected outcomes and impacts?**

Planned programs are developed using the Logic Model, defining outcomes and impacts

and the associated indicators of change. Outcomes are written to reflect the ultimate results desired, are achievable by the program, and will usually require multiple years to come to fruition. Intermediate indicators will serve as benchmarks of progress over the duration of the program, and will be reported annually.

In the ultimate goals section of One Solution lists the outcome statements for the Planned programs. Each of these has outcome indicators defined and associated to outcome statements within the Vermont on-line reporting system, Albert.These outcome indicators are listed as an Outcome Targets in One Solution.In the Albert on-line system each Output (output measure) has outcome indicators associated, tying the activity with the desired measurable results.

**4. How will the planned programs result in improved program effectiveness and/or**

Beginning with the identification of a situation and the clear articulation of a problem or issue that needs addressing, planned programs set a course of action. Through the use of both process and summative evaluation, the focus shifts from determining activities and inputs, to improving the learning environment and opportunities for our clientele, and measuring actual achievement of impacts. Tracking program costs will provide additional criterion in determining the efficiency of the program, enabling us to further promote programming that works.

Each planned program is built from organizationally defined outcomes and outcome indicators.In the 07-11 submission of the One Solution report, planned programs were completed using group level plans.Group level plans are logic models of the defined problems using the defined outcomes and outcome indicators and draft outlines of individual logic models which address the defined problems or group level plans.In 08-12 submission and subsequent submissions of the One Solution report, planned programs were completed using individual logic models grouped by the problems defined in the group level plans.This results in programming being focused because it is problem driven and results focused as a result of clearly defined outcomes and measurable indicators used by all the individuals as they construct individual logic models.

The One Solution report is reflective of the sum of the actual planned effort of individuals in the organization.This evolution of planning will refine the indicators and outputs, resulting in fewer indicators giving more focus to our evaluation efforts.In the 09-13 planning year, professional development activities focused on evaluation and program development. Outcome indicators at the lowest level, in most cases, have been removed as options for individuals to report to, requiring a higher level of effort to measure program results at the action level and to carefully plan the evaluation efforts as part of their programming.

In the 10-14 planning year, through a facilitated process faculty and key program staff reviewed each of the group plans to "clean them up".Relevancy, accuracy, redundancy, focus and logic were the focus and result of the process. This process reduced the number of group plans from 20 to 8 and reduced the number of outcomes and indicators significantly. In FY11-15 efforts have focused on evaluation planning for indicators building capacity for data validity and impact focused reporting.

## IV. Stakeholder Input

### 1. Actions taken to seek stakeholder input that encourages their participation

- ☑ Use of media to announce public meetings and listening sessions
- ☑ Targeted invitation to traditional stakeholder groups

- ☐ Targeted invitation to non-traditional stakeholder groups
- ☑ Targeted invitation to traditional stakeholder individuals
- ☐ Targeted invitation to non-traditional stakeholder individuals
- ☑ Targeted invitation to selected individuals from general public
- ☐ Survey of traditional stakeholder groups
- ☐ Survey of traditional stakeholder individuals
- ☑ Survey of the general public
- ☐ Survey specifically with non-traditional groups
- ☐ Survey specifically with non-traditional individuals
- ☐ Survey of selected individuals from the general public
- ☑ Other (see narrative for details)

**Brief explanation.**

UVM Extension has a state advisory board with representatives from across the state. The members of this board were drawn from a cross section of disciplines and program areas in which the organization provides educational opportunities. The members of the board have the responsibility to work with the director to review programs, budget decisions and new initiatives within the organization. The board includes at least one youth member, currently the Vermont Agricultural Ambassador for the State of Vermont that is selected annually. The members represent UVM Extension and not the individual disciplines or program areas from which they were selected for board discussions.

The board members are given weekly updates on the actions of the director and are encouraged to provide feedback to the director on an on-going basis. In addition, the board members are contacted on an as needed basis, collectively or individually to help provide feedback to the director. The board has two regularly scheduled business meetings per year and participates in the annual legislative reception.

In addition to the state advisory board, regional and local focus groups, surveys, discussions with associations, agencies and non-governmental organizations by the director, associate directors, faculty and/or program staff are all used to gather information from clientele regarding programmatic needs.

The Center for Rural Studies conducts an annual Vermonter Poll, a phone survey of 600 Vermonters.

Faculty and staff work with many partners and program participants who offer input on present and future programming to address identified needs.

For the Vermont Agricultural Experiment Station, our stakeholders include the following:

--College of Agriculture and Life Sciences' Advisory Board
--Vermont Dairy Center of Excellence Advisory Board
--Vermont Maple Industry Council
--Vermont Agency of Agriculture, Food and Markets
--Northeast Organic Farming Association of Vermont (NOFA)
--Vermont Tree Fruit Growers' Assocation
--several regional Maple Sugar Makers Associations
-citizen action groups such as Friends of the Hort Farm

**2(A). A brief statement of the process that will be used by the recipient institution to identify individuals and groups stakeholders and to collect input from them**

**1. Method to identify individuals and groups**

- ☑ Use Advisory Committees
- ☑ Use Internal Focus Groups
- ☑ Use External Focus Groups
- ☐ Open Listening Sessions
- ☐ Needs Assessments
- ☑ Use Surveys
- ☐ Other

**Brief explanation.**

UVM Extension has a state advisory board with representatives from across the state. The members of this board were drawn from a cross section of disciplines and program areas in which the organization provides educational opportunities. Future efforts will include notices in local popular press and other media to solicit all interested stakeholders. Applications from women and people from diverse racial, ethnic and cultural backgrounds will be encouraged.

The Vermont Agricultural Experiment Station seeks input often from the College of Agriculture and Life Sciences' (CALS) Advisory Board to increase the relevancy of its research programs for Vermont communities, landscapes and human and animal health. This board is a cross section of Vermont and Northeast representatives that form part of our stakeholder groups. We seek input from these stakeholders and colleagues regularly and consist of the following groups: the Vermont Agency of Agriculture, Food and Markets; various Vermont commodity groups; the new UVM Dairy Center of Excellence; and among the agricultural industry groups throughout Vermont and beyond.

**2(B). A brief statement of the process that will be used by the recipient institution to identify individuals and groups who are stakeholders and to collect input from them**

**1. Methods for collecting Stakeholder Input**

- ☑ Meeting with traditional Stakeholder groups
- ☑ Survey of traditional Stakeholder groups
- ☑ Meeting with traditional Stakeholder individuals
- ☑ Survey of traditional Stakeholder individuals
- ☐ Meeting with the general public (open meeting advertised to all)
- ☑ Survey of the general public
- ☐ Meeting specifically with non-traditional groups
- ☐ Survey specifically with non-traditional groups

- ☐ Meeting specifically with non-traditional individuals
- ☐ Survey specifically with non-traditional individuals
- ☑ Meeting with invited selected individuals from the general public
- ☑ Survey of selected individuals from the general public
- ☐ Other

**Brief explanation.**

The Vermont Agricultural Experiment Station (VT-AES) collects stakeholder input from regular "Vermonter Poll" surveys accomplished through the University of Vermont (UVM) Center for Rural Studies. Also, VT-AES seeks input often from the College of Agriculture and Life Sciences' (CALS) Advisory Board to increase the relevancy of its research programs for Vermont communities, landscapes and human and animal health. This board is a cross section of Vermont and Northeast representatives that form part of our stakeholder groups. We seek input from these stakeholders and colleagues regularly and consist of the following groups: the Vermont Agency of Agriculture, Food and Markets; various Vermont commodity groups; the new UVM Dairy Center of Excellence; and among the agricultural industry groups throughout Vermont and beyond.

University of Vermont Extension uses regular communication with state advisory board members, encourages staff to work with program advisory groups and to gather participant input about the relevancy, timeliness, methodology, topic and location of programs. Efforts are made to collect feedback that influences program direction via the on-line reporting tool. In response to the Civil Right review feedback, administration will be increasing efforts to raise awareness of staff of the importance and tools that might encourage more diverse stakeholders.

**3. A statement of how the input will be considered**

- ☑ In the Budget Process
- ☑ To Identify Emerging Issues
- ☑ Redirect Extension Programs
- ☑ Redirect Research Programs
- ☑ In the Staff Hiring Process
- ☑ In the Action Plans
- ☑ To Set Priorities
- ☐ Other

**Brief explanation.**

# V. Planned Program Table of Content


| S. No. | PROGRAM NAME |
|---|---|
| 1 | Global Food Security and Hunger |
| 2 | Community Development and the Personal and Intellectual Development of Youth and Adults |
| 3 | Climate Change |
| 4 | Sustainable Energy |
| 5 | Childhood Obesity |
| 6 | Food Safety |
| 7 | Urban Non Point Source Pollution |

## V(A). Planned Program (Summary)

**Program # 1**

### 1. Name of the Planned Program

Global Food Security and Hunger

### 2. Brief summary about Planned Program

UVM Extension and the AES are continually working to boost agricultural production in Vermont and the region to meet the needs of local communities and those wanting fresh agricultural products in Northeastern urban centers. The work undertaken has contributed to the growing demand for local and fresh foods in the state and region. This work also incorporates focused activities to make local food accessible to vulnerable populations as well as educational options that allow vulnerable populations stretch their food dollar. Programs such as Local Foods, Beginning Farmer, Farm Viability, Master Gardener, Women's Ag Network, among other programs provide interested residents the ability to grow, use and provide food to other individuals.

VT-AES efforts in this planned program include:

- Community Development and planning
- On farm/community energy generation and secondary revenue generation
- Community and technology for rural community development
- Community market development and local foods distribution
- Communication methods and research studies for non-profit and profit organizations
- Agritourism
- Public land management
- Development of environmentally safe, non food product development (adhesives, plastics and road deicer) from whey
- Development of Artisan cheese markets
- Distinctiveness/marketing of regional foods
- Food by-product development
- Transportation initiatives
- Integrated Pest Management research studies
- Research studies promoting plant disease resistance and animal health, including biosafety

**3. Program existence :**

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

**4. Program duration :**

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :**

- ◉ Yes
- ○ No

**6. Expending other than formula funds or state-matching funds :**

- ◉ Yes
- ○ No

## V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 133 | Pollution Prevention and Mitigation | 4% | | 0% | |
| 201 | Plant Genome, Genetics, and Genetic Mechanisms | 0% | | 2% | |
| 203 | Plant Biological Efficiency and Abiotic Stresses Affecting Plants | 0% | | 4% | |
| 205 | Plant Management Systems | 10% | | 10% | |
| 211 | Insects, Mites, and Other Arthropods Affecting Plants | 0% | | 17% | |
| 215 | Biological Control of Pests Affecting Plants | 0% | | 3% | |
| 216 | Integrated Pest Management Systems | 7% | | 12% | |
| 307 | Animal Management Systems | 1% | | 0% | |
| 311 | Animal Diseases | 0% | | 14% | |
| 313 | Internal Parasites in Animals | 1% | | 0% | |
| 315 | Animal Welfare/Well-Being and Protection | 1% | | 0% | |
| 601 | Economics of Agricultural Production and Farm Management | 40% | | 15% | |
| 602 | Business Management, Finance, and Taxation | 16% | | 6% | |
| 604 | Marketing and Distribution Practices | 5% | | 11% | |
| 605 | Natural Resource and Environmental Economics | 7% | | 1% | |
| 608 | Community Resource Planning and Development | 0% | | 3% | |
| 723 | Hazards to Human Health and Safety | 8% | | 1% | |
| 801 | Individual and Family Resource Management | 0% | | 1% | |
| | **Total** | 100% | | 100% | |

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

Situation and priorities from each of the Parent plans (problem driven logic models) as follows:

**From Communities, business including agricultural and forest landowners and operators, and homeowners protect the environment:**

Agriculture in Vermont is becoming more highly diversified and represents a critical component of this state's revenue. The fundamental character of Vermont is reflected in its agricultural working

landscape which symbolizes a way of life strongly cherished by its citizens. The stakeholders of Vermont's agriculture encompass all the state's citizens, including the general public and a diverse group of growers, farmers, landscapers and practitioners involved with working on or for the land. These stakeholders recognize the value of Vermont's agriculture and the need to increase their knowledge and improve their skills to ensure its environmental and economic sustainability thereby protecting air, water, soil, and human health resources. As a result of climate change and increased mobility of people and products, there is an increased threat of new and invasive pests and diseases impacting agriculture and the landscape in Vermont. Extension programs and personnel address critical stakeholder issues by disseminating essential current science-based information to a broad range of audiences to increase their knowledge and skills and encourage implementation of cost-effective, environmentally sound sustainable agricultural practices.

Improved knowledge and skills required to ensure sustainability of farms, landscapes and communities include;

• Pest management practices including pest identification and pest management using a variety of tools employing least toxic practices (IPM).

• Safe and judicious use of pesticides

• Nutrient Management Program

• Invasive pest identification and awareness

• Organic management concepts, strategies and practices

**From Economic sustainability of farms, forests, and other enterprises:**

Both the economy and the environment consistently top the list of Vermonters' concerns, according to the annual Vermonter Poll (2008). These findings correspond with a recent survey undertaken as part of the Council on the Future of Vermont, a project of the Vermont Council on Rural Development with the goal of promoting public dialogue on values, challenges, opportunities, priorities and visions for Vermont. Survey findings include rankings of the top seven highest rated values and challenges (Center for Rural Studies, August 2008, http://crs.uvm.edu/survey/futureofvermont/CFV_Summary_Report.pdf ). Respondents placed the greatest value overall on "the state's working landscape and heritage." The greatest challenges were "the increasing costs of living, such as transportation, heating and electricity" followed closely by "the health and viability of Vermont farms and the agricultural sector."

Equine Operations make up a viable and growing sector of Vermont agriculture, and not only do they contribute to the open land and agricultural heritage, but also provide an active, healthy alternative activities for Vermonters of all ages. In addition, Vermont equine operations support the agricultural infrastructure that serve all of agriculture (i.e. indirect agricultural businesses such as veterinarians, feed and farm stores, tack businesses, truck and trailer businesses, hay dealers, etc.)

Clearly, economic opportunities that support the working landscape are needed throughout the state. The Vermont Sustainable Agriculture Council's 2009 Annual Report and Recommendations (http://www.uvm.edu/sustainableagriculture/Documents/CouncilReport09.pdf) focus on two primary areas: strengthening Vermont's local food system and enhancing on-farm energy alternatives. Improved knowledge and skills leading to adoption of new practices can promote economic sustainability of farms, forests, natural-resource based enterprises, and communities. Specific problems that need to be addressed include:

• Lack of adequate business planning by farm and forest land owners threatens their future financial security and business viability.

• Ag producers and other enterprises are not reaching their profit potential through marketing and management practices.

• Lack of production education and research can decrease profitability of enterprises (e.g., organic dairy farms).

• Price and supply of fuel poses economic risk to farmers and rural communities.

• Tax preparers are challenged to maintain competency with tax laws.

• Equine Operators are not aware of or able to take full advantage of agricultural benefits that currently exist in Vermont (e.g. Current Use).

University of Vermont Extension is uniquely positioned to deliver programs that integrate the latest research on agriculture, forestry, and enterprise development with practical applications at the community and individual business level.

**From Making Healthy Lifestyle Choices:**

Lifestyle changes that include more healthful eating (encourage consumption of whole grains, vegetables, and fruits - especially those locally grown; portion control, fewer sweetened beverages), practicing good food safety skills, and increasing physical activity while reducing sedentary time can have a positive influence on reducing and managing chronic conditions to increase their chances for a longer life.

Poverty, hunger, and food insecurity are all factors that contribute to poor health and poor nutrition. Limited resource individuals and families, faced with the loss of jobs, lack of transportation, less affordable housing, and rising fuel and food costs, may be forced to choose the purchase of essentials like heat and electricity over food. Often times it is the quality of food that is sacrificed in an effort to make ends meet, and caretakers often resort to buying calorie rich, nutrient poor foods because they are less expensive. This pattern of eating exacerbates the obesity epidemic, denies children optimal growth, and has on overall negative impact on the physical, emotional, and financial health of our communities.

Hunger and food insecurity are real and growing concerns in Vermont. In 2007, approximately 71,000 Vermonters, 19,000 of which were children, had a gross annual income at or below 100% of the federal poverty level. The same year an additional 109,000 Vermonters had a gross annual income between 100-199% of the federal poverty level. These two subgroups combined represent the approximately 30% of our population who are at risk for hunger and food insecurity and the detrimental health effects associated these conditions. Preliminary data indicates that 61,267 Vermonters (30,194 households) received an average of $200 per month in benefits from the Supplemental Nutrition Assistance Program: 3SquaresVT in November 2008, an increase of 13.9% over the previous year. Even with increasing eligibility and participation, it is estimated that only 68% of eligible Vermonters receive these benefits.

**From Understanding of, and preparedness for, natural, accidental and intentional disasters:**

The lack of understanding of, and preparedness for, natural, accidental, and intentional disasters - including bio-security issues related to human and animal health and safety, severe storms, floods, drought, fires, pandemic flu, etc.,- creates environmental, economic, social and health risks for people, animals, communities and businesses in Vermont. "There is a growing body of scientific literature that addresses the need for disaster mitigation, as experts predict that the United States will continue to experience an increase in the severity, and perhaps number of, critical incidents." (Cutter, 2006; IPCC 2007.)

Resilience, as defined at www.resilientus.org, is 'the capability to anticipate risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and growth in the face of turbulent change'.

**2. Scope of the Program**

- ☑ In-State Extension
- ☐ In-State Research
- ☐ Multistate Research
- ☑ Multistate Extension
- ☑ Integrated Research and Extension
- ☑ Multistate Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

**From Communities, business including agricultural and forest landowners and operators, and homeowners protect the environment:**

• Growers will choose to learn about IPM vs standard pest management practices. Growers want to use pesticides safely, wisely and as a last resort.
• Farmers will choose to learn about soil building vs. standard soil practices
• Growers want to decrease use of chemical pesticides and believe IPM will help them.
• Growers will invest time and money in IPM and want to learn more about how to use it effectively.
• IPM tactics exist to address the pest management problems in Vermont.

**From Economic sustainability of farms, forests, and other enterprises:**

• Farmers will choose to learn about soil building vs. standard soil practices
• Differences between low-yielding and high-yielding sap collection systems can often be attributed to education, as the maple producer who may have purchased the necessary equipment often does not understand the steps necessary for its proper installation and maintenance.
•The inability to meet quality standards in maple production is rarely caused by a failure to use new technology or failure to adopt the latest sap collection or boiling methods; instead, it is directly related to lack of education about producing quality syrup.
• There is much land available and with the development of two lamb marketing organizations, there is now a reliable market available in which to sell lamb.
•Each year, there is a new wave of people that are interested in raising sheep. For the most part, these people have no farming experience.
•There still is a trend and place in Vermont for large dairy farm operations.
• Environmental regulations are only getting tighter, therefore making it increasingly difficult for all dairy operations.
•Due to niche marketing, value added products, the organic market, and Vermont's proximity to large markets, there should always be dairy farms in Vermont.
• Education & research in organics will help farmers improve profitability. Organic dairy farmers will be able to add another enterprise to farm.
• Price of fuel will remain unstable in the future. Price of fuel will continue to pose an economic risk to farmers. Economic advantages of on-farm biodiesel production will increase.• The rate of adoption of dairy farm practice changes are influenced by farm profitability and personal beliefs in the value of any proposed changes in farm management.
• State and federal tax laws and regulations will continue to change, and that practitioners will continue to need good information that is reasonably-priced.
• Usually farmers start-up with no business plan, sometimes they expand from a hobby, or take-over the family farm, then find themselves needing to borrow money or make a large change and find themselves with no real plan.
• The travel and tourism industry in Vermont is growing rapidly and may soon become the largest

industry in Vermont if trends continue. This rapid growth provides both challenges and opportunities for Vermont's working landscape and rural communities.

**From Making Healthy Lifestyle Choices:**

•Preventing or managing chronic diseases can lower health care costs. Individuals practicing positive lifestyle changes will feel better about themselves, their families, and their communities and to improve the quality of lives of Vermonters.

•Consumers can lower the risk of foodborne illness by practicing food safety skills and safe food preservation practices. Increasingly, foodborne illness outbreaks are being traced to fresh produce. As harmful microorganisms are part of the gardening environment, Home gardens need to follow good agricultural practices to reduce the risk of contamination.

**From Understanding of, and preparedness for, natural, accidental and intentional disasters:**

•Many groups, organizations and agencies are addressing the many topics associated with critical incidents/disaster, but these groups are not necessarily working together.
•The general public is confused, and does not have a good grasp of how to be prepared for emergencies and disasters that affect their community.
•Extension personnel are generally not trained in community resilience; they may not have the necessary knowledge, and/or skills.
•Funding is available, but likely attained through cooperative efforts.
•Some agencies, notably the USDA, have required training. Most others, including UVM Extension and the VT Agency of Ag, have few people trained in emergency response. .

**2. Ultimate goal(s) of this Program**

Improve agricultural and environmental sustainability *(Condition)*

· Farm and forest landowners/operators implement management practices that comply with environmental water quality laws and/or protect water resources*(Action)*

· Farms address their contribution to surface water pollution through NMP without decreasing profitability*(Action)*

· Homeowners will protect natural resources through improved gardening practices. *(Action)*

· Increase the number of growers, facility managers and home gardeners who implement IPM strategies*(Action)*

· Improve community collaboration to address issues and build community assets. *(Action)*

· Increase economic sustainability of farms, forests, and other enterprises that contribute to Vermont's working landscape *(Action)*

· Improve community readiness for, and mitigation of, natural, accidental and intentional disasters. *(Action)*

Improve individual and family health. *(Condition)*

· Increase production and/or access to safe, nutritious food *(Action)*

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 25.0 | 0.0 | 5.7 | 0.0 |
| 2013 | 25.0 | 0.0 | 5.7 | 0.0 |

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2014 | 25.0 | 0.0 | 5.7 | 0.0 |
| 2015 | 25.0 | 0.0 | 5.7 | 0.0 |
| 2016 | 25.0 | 0.0 | 5.7 | 0.0 |

## V(F). Planned Program (Activity)

### 1. Activity for the Program

Project listed in bold followed by delivery methods:

- **Beginning Farmers**. Focus groups, learning circles, workshops, mini-courses and publications
- **Ag Business Management.** Conferences, courses, consultations and farm visits.
- **Agricultural safety**. Courses, consultations and farm visits
- **Apples and Grapes**, Consultations, research and field visits.
- **Non-dairy livestock** Conferences, workshops, discussion groups, individual consultations, articles, web site.
- **Community Preparedness.** Workshops, discussion group
- **Equine program.** Annual equine event, publications, workshops.
- **Farm and Forest Transfers.** Workshops, consultations, farm visits
- **Farm Viability.** Farm visits, consultations
- **Farming Alternatives**. Workshops, consultations, farm visits.
- **Forage and Pasture Management Education.** Conference, farm visits, consultations
- **Maple Program.** Conference, workshops, newsletter.
- **Nutrient Management Program**. Farm visits, consultations
- **Organic Grain Project**. Demonstrations, data gathering.
- **Pest Management Education.** IPM and Pesticide Education and Safety Program (PESP) training.
- **Sheep program.** Hands-on workshop, applied research, newsletter.
- **Private/Commercial Landowner and Industry Professional Education**: Tour and conference
- **Senior Farm Share Nutrition Programs -** single or multi-session nutrition workshop for low-income
- **UVM Tax School.** conference, tax book
- **Vegetable and Berry Growers**. Consultations, farm visits, meetings, various media, presentations, website.
- **Vermont New Farmer Network**. Conference, networking, consultations
- **Vermont Pasture Network.** Pasture walks, demonstrations and trials, conference, consultations, various media.
- **Vermont Tourism and Recreation.** Research, conference.
- **Master Gardener.** Course, train the trainer
- **Women's Agricultural Network.** Newsletters, website, classes, workshops, individual and small group consultations.
- **Sustainable Forests.** Workshops, newsletter, consultations

**AES efforts.**

- **Animal Manure Treatment Systems**

- **Storm and Wastewater Management Systems**
- **Perturbation of soil ecosystems by anthropomorphic interventions**
- **Soil nutrient effect on forest ecosystem productivity and lake water quality**
- **Soil fertility/chemistry/physical problems associated with waste disposal and bioremod faction**
- **Economics of organic dairy, crop management and alternative energy**
- **Heifer nutrition, rearing and management**
- **Dairy nutritional immunology**
- **Small ruminant production and management systems**
- **Development of strategies to address applied equine issues**
- **Biofuels from coconuts and other energy sources**
- **Identification of genetic traits that make species invasive**
- **Surveillance and prevention of spread of Asian Longhorned Beetle**
- **Management of thrips pests in forests and greenhouses**
- **Identification/control of fungal propagation**
- **Fungal biological plant protection, collection and management**
- **Explore microbial pesticides and fungal components as IPM strategies**
- **Innate immunity, DNA-based vaccines and mastitis prevention**
- **Hormonal regulation of glucose synthesis and milk production**
- **Functional genomics and photoperiod effects on hormonal cycles/milk production**
- **Explore ruminant lipid metabolism**
- **Impact of global climate**

**2. Type(s) of methods to be used to reach direct and indirect contacts**

**Extension**

| Direct Methods | Indirect Methods |
|---|---|

| | |
|---|---|
| ☑ Education Class | ☐ Public Service Announcement |
| ☑ Workshop | ☐ Billboards |
| ☑ Group Discussion | ☑ Newsletters |
| ☑ One-on-One Intervention | ☑ TV Media Programs |
| ☑ Demonstrations | ☑ Web sites |
| ☑ Other 1 (Train the Trainer) | ☑ Other 1 (Publication- professiona/peer) |
| ☑ Other 2 (Presentation/field days) | ☐ Other 2 |

**3. Description of targeted audience**

- 4-H: Camp Counselors
- Adults
- Age 25 - 60 Adult
- Age 46 - 65 Adult
- Age 60 - Senior
- Agriculture/Natural Resources: Watershed Based Organizations
- Agriculture: Apple Growers
- Agriculture: Beef Producers
- Agriculture: CCA & Crop Consultants
- Agriculture: Crop Producers
- Agriculture: Dairy Producers
- Agriculture: Equine Producers/Owners
- Agriculture: Farm Employees
- Agriculture: Farm Families
- Agriculture: Farm Managers
- Agriculture: Farmers
- Agriculture: Goat & Sheep Producers
- Agriculture: Greenhouse Ornamental Growers
- Agriculture: Home Gardeners
- Agriculture: Industry Professionals
- Agriculture: Livestock producers
- Agriculture: Maple Industry
- Agriculture: Maple Sugar Producers
- Agriculture: Non-Dairy Producers
- Agriculture: Nursery operators
- Agriculture: Ornamentals Industry Professionals
- Agriculture: Service Providers
- Agriculture: Small Fruit & Vegetable Growers
- Agriculture: Veterinarians
- Agriculture:Dairy Goat, Meat Goat and Dairy Sheep Producers

## V(G). Planned Program (Outputs)

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact**

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2012 | 30000 | 0 | 500 | 0 |
| 2013 | 30000 | 0 | 500 | 0 |
| 2014 | 30000 | 0 | 500 | 0 |
| 2015 | 30000 | 0 | 500 | 0 |
| 2016 | 30000 | 0 | 500 | 0 |

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

**3. Expected Peer Review Publications**

| Year | Research Target | Extension Target | Total |
|---|---|---|---|
| 2012 | 5 | 3 | 8 |
| 2013 | 5 | 3 | 8 |
| 2014 | 5 | 3 | 8 |
| 2015 | 5 | 3 | 8 |
| 2016 | 5 | 4 | 9 |

## V(H). State Defined Outputs

### 1. Output Target

- Class/course

  **2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

- Conference

  **2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

- Consultation

  **2012:**1100 **2013:**1100 **2014:**1100 **2015:**1100 **2016:**1100

- Consumer Publication

  **2012:**4 **2013:**4 **2014:**4 **2015:**4 **2016:**4

- Demonstration

  **2012:**25 **2013:**25 **2014:**25 **2015:**25 **2016:**25

- Discussion group

  **2012:**20 **2013:**20 **2014:**20 **2015:**20 **2016:**20

- Educational/evaluation instrument

  **2012:**0 **2013:**2 **2014:**0 **2015:**2 **2016:**0

- Electronic Communication/phone

  **2012:**700 **2013:**700 **2014:**700 **2015:**700 **2016:**700

- Field day/fair

  **2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

- Field site visit

**2012:**100 **2013:**100 **2014:**100 **2015:**100 **2016:**100

- Funding request

**2012:**2 **2013:**2 **2014:**3 **2015:**3 **2016:**3

- Presentation

**2012:**40 **2013:**40 **2014:**40 **2015:**40 **2016:**40

- Publication - Peer Reviewed

**2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- Publication - curriculum

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- Publication - fact sheet

**2012:**30 **2013:**30 **2014:**30 **2015:**30 **2016:**30

- Publication - magazine article

**2012:**2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

- Publication - manual

**2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**0

- Publication - newsletter

**2012:**15 **2013:**15 **2014:**15 **2015:**15 **2016:**15

- Publication - newsprint article

**2012:**50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

- Research project

**2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

- TV segment/ATF

**2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

- Technical Publication

**2012:**20 **2013:**20 **2014:**20 **2015:**20 **2016:**20

- Tour(s)

**2012:**2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

- Train the Trainer trainings

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- Website development and updates

**2012:**30 **2013:**30 **2014:**30 **2015:**30 **2016:**30

- Workshop - series

**2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

- Workshop - single session

**2012:**50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

**V(I). State Defined Outcome**

| O. No | Outcome Name |
|---|---|
| 1 | Increase the number of farmers who implement at least one cropping practice to improve crop and soil productivity and water quality |
| 2 | Increase in collaboration with agency and industry personnel to address farm safety and emergency preparedness |
| 3 | Increase in number of tax school participants stating improved accuracy of tax reporting for their clients |

| | |
|---|---|
| 4 | Increase in number of tax schools participants understanding federal and state tax laws and requirements |
| 5 | Increase in number of farmers that develop a nutrient management plan for their farm |
| 6 | Increase the number of farmers who implement at least one change in nutrient management plan practices |
| 7 | Increase the number of legislators and key decision makers who increase understanding of current local agricultural issues |
| 8 | Increased delivery of organic dairy information to dairy farmers across the nation that is accessible, reliable, credible and up-to-date. |
| 9 | Increase in number of Master Gardener participants earning certification |
| 10 | increase in the number of farmers who improve pasture management practices |
| 11 | Number of enterprises (already using recommended practices)that use Extension consultation to assess/inform business decisions |
| 12 | Number of clientele who have adopted one or more IPM practices that increase environmental sustainability |
| 13 | Number of enterprises that adopt a recommended practice resulting in increased revenues and/or reduced costs |
| 14 | Participants will have gained knowledge on how to grow organic crops (e.g. apples, grains) |
| 15 | A greater variety of produce available at home. |
| 16 | Number of farms that plan for and incorporate biosecurity, safety and preventative measures |
| 17 | Farmers will implement safety measures, i.e., ROPS on tractors |
| 18 | Farmers who implement a new practice to begin production of or improve current oilseed production yield and quality |
| 19 | Growers adopting new varieties |
| 20 | Number of individuals who change their gardening practices to reduce gardening inputs |
| 21 | Number of participants who go on to start a business within 18 months of course completion |
| 22 | Number of participants who make an informed decision to not start a business after completing the course |
| 23 | Number of farmers who will grow and market soybeans for local feed, oil production or export market to increase farm income |
| 24 | Number of farmers who will grow and produce energy crops and transform into energy products |

**Outcome #** 1

**1. Outcome Target**

Increase the number of farmers who implement at least one cropping practice to improve crop and soil productivity and water quality

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

**3. Associated Knowledge Area(s)**

- ☑ 133 - Pollution Prevention and Mitigation
- ☑ 201 - Plant Genome, Genetics, and Genetic Mechanisms
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☑ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☑ 216 - Integrated Pest Management Systems
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 313 - Internal Parasites in Animals
- ☐ 315 - Animal Welfare/Well-Being and Protection
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 605 - Natural Resource and Environmental Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☑ 1862 Research

**Outcome #** 2

**1. Outcome Target**

Increase in collaboration with agency and industry personnel to address farm safety and emergency preparedness

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**30 **2013:**30 **2014:**30 **2015:**30 **2016:**30

**3. Associated Knowledge Area(s)**

- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 201 - Plant Genome, Genetics, and Genetic Mechanisms

- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 313 - Internal Parasites in Animals
- ☐ 315 - Animal Welfare/Well-Being and Protection
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 605 - Natural Resource and Environmental Economics
- ☐ 608 - Community Resource Planning and Development
- ☑ 723 - Hazards to Human Health and Safety
- ☐ 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 3

**1. Outcome Target**

Increase in number of tax school participants stating improved accuracy of tax reporting for their clients

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

**3. Associated Knowledge Area(s)**

- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 201 - Plant Genome, Genetics, and Genetic Mechanisms
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants

- ☐ 216 - Integrated Pest Management Systems
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 313 - Internal Parasites in Animals
- ☐ 315 - Animal Welfare/Well-Being and Protection
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 605 - Natural Resource and Environmental Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 4

**1. Outcome Target**

Increase in number of tax schools participants understanding federal and state tax laws and requirements

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**50 | **2013:**50 | **2014:**50 | **2015:**50 | **2016:**50 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 201 - Plant Genome, Genetics, and Genetic Mechanisms
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 313 - Internal Parasites in Animals

- ☐ 315 - Animal Welfare/Well-Being and Protection
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☑ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 605 - Natural Resource and Environmental Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 5

**1. Outcome Target**

Increase in number of farmers that develop a nutrient management plan for their farm

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

**3. Associated Knowledge Area(s)**

- ☑ 133 - Pollution Prevention and Mitigation
- ☐ 201 - Plant Genome, Genetics, and Genetic Mechanisms
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 313 - Internal Parasites in Animals
- ☐ 315 - Animal Welfare/Well-Being and Protection
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices

- ☐ 605 - Natural Resource and Environmental Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 6

**1. Outcome Target**

Increase the number of farmers who implement at least one change in nutrient management plan practices

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**30 | **2013:**30 | **2014:**30 | **2015:**30 | **2016:**30 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- ☑ 133 - Pollution Prevention and Mitigation
- ☐ 201 - Plant Genome, Genetics, and Genetic Mechanisms
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☐ 205 - Plant Management Systems
- ☐ 211 - Insects, Mites, and Other Arthropods Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 307 - Animal Management Systems
- ☐ 311 - Animal Diseases
- ☐ 313 - Internal Parasites in Animals
- ☐ 315 - Animal Welfare/Well-Being and Protection
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 602 - Business Management, Finance, and Taxation
- ☐ 604 - Marketing and Distribution Practices
- ☐ 605 - Natural Resource and Environmental Economics
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 7

**1. Outcome Target**

Increase the number of legislators and key decision makers who increase understanding of current local agricultural issues

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**10 | **2013:**10 | **2014:**10 | **2015:**10 | **2016:**10 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [x] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 8

**1. Outcome Target**

Increased delivery of organic dairy information to dairy farmers across the nation that is accessible, reliable, credible and up-to-date.

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**100 **2013:**100 **2014:**100 **2015:**100 **2016:**100

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 9

**1. Outcome Target**

Increase in number of Master Gardener participants earning certification

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**100 | **2013:**100 | **2014:**100 | **2015:**100 | **2016:**100 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [x] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [x] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 10

**1. Outcome Target**

increase in the number of farmers who improve pasture management practices

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**130 **2013:**130 **2014:**130 **2015:**130 **2016:**130

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 11

**1. Outcome Target**

Number of enterprises (already using recommended practices)that use Extension consultation to assess/inform business decisions

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**100 | **2013:**100 | **2014:**100 | **2015:**100 | **2016:**100 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [x] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 12

**1. Outcome Target**

Number of clientele who have adopted one or more IPM practices that increase environmental sustainability

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**650 **2013:**650 **2014:**650 **2015:**650 **2016:**650

**3. Associated Knowledge Area(s)**

- [x] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [x] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [x] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 13

**1. Outcome Target**

Number of enterprises that adopt a recommended practice resulting in increased revenues and/or reduced costs

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**775 | **2013:**775 | **2014:**775 | **2015:**775 | **2016:**775 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [x] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [x] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [x] 216 - Integrated Pest Management Systems
- [x] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [x] 313 - Internal Parasites in Animals
- [x] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [x] 602 - Business Management, Finance, and Taxation
- [x] 604 - Marketing and Distribution Practices
- [x] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 14

**1. Outcome Target**

Participants will have gained knowledge on how to grow organic crops (e.g. apples, grains)

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**150 **2013:**150 **2014:**150 **2015:**150 **2016:**150

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [x] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [x] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 15

**1. Outcome Target**

A greater variety of produce available at home.

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**300 **2013:**300 **2014:**300 **2015:**300 **2016:**300

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [x] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 16

**1. Outcome Target**

Number of farms that plan for and incorporate biosecurity, safety and preventative measures

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**50 | **2013:**50 | **2014:**50 | **2015:**50 | **2016:**50 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [x] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 17

**1. Outcome Target**

Farmers will implement safety measures, i.e., ROPS on tractors

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**30 | **2013:**30 | **2014:**0 | **2015:**0 | **2016:**0 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [x] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 18

**1. Outcome Target**

Farmers who implement a new practice to begin production of or improve current oilseed production yield and quality

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**30 | **2013:**30 | **2014:**30 | **2015:**30 | **2016:**30 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 19

**1. Outcome Target**

Growers adopting new varieties

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [x] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 20

**1. Outcome Target**

Number of individuals who change their gardening practices to reduce gardening inputs

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**300 | **2013:**300 | **2014:**300 | **2015:**300 | **2016:**300 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [x] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 21

**1. Outcome Target**

Number of participants who go on to start a business within 18 months of course completion

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**40 | **2013:**40 | **2014:**40 | **2015:**40 | **2016:**40 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 22

**1. Outcome Target**

Number of participants who make an informed decision to not start a business after completing the course

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**50 | **2013:**50 | **2014:**50 | **2015:**50 | **2016:**50 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 23

**1. Outcome Target**

Number of farmers who will grow and market soybeans for local feed, oil production or export market to increase farm income

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**50 | **2013:**50 | **2014:**50 | **2015:**50 | **2016:**50 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
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- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 24

**1. Outcome Target**

Number of farmers who will grow and produce energy crops and transform into energy products

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

| **2012:**50 | **2013:**50 | **2014:**50 | **2015:**50 | **2016:**50 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 211 - Insects, Mites, and Other Arthropods Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 307 - Animal Management Systems
- [ ] 311 - Animal Diseases
- [ ] 313 - Internal Parasites in Animals
- [ ] 315 - Animal Welfare/Well-Being and Protection
- [x] 601 - Economics of Agricultural Production and Farm Management
- [ ] 602 - Business Management, Finance, and Taxation
- [ ] 604 - Marketing and Distribution Practices
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [ ] 801 - Individual and Family Resource Management

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

## V(J). Planned Program (External Factors)

**1. External Factors which may affect Outcomes**

- ☑ Natural Disasters (drought, weather extremes, etc.)
- ☑ Economy
- ☑ Appropriations changes
- ☑ Public Policy changes
- ☑ Government Regulations
- ☑ Competing Public priorities
- ☑ Competing Programmatic Challenges
- ☐ Populations changes (immigration, new cultural groupings, etc.)
- ☐ Other

**Description**

**From Communities, business including agricultural and forest landowners and operators, and homeowners protect the environment:**

- Soil building takes time and on some farms, investments in soil quality will take more than the duration of the project to show results.
- Schools may lack personnel or funding to dedicate time and energy to IPM practices.

- Growers are receptive to expand their use of IPM, but make changes in their production practices slowly to reduce negative impacts.
- New pesticides, biological controls and other effective IPM tactics are still being tested, and need to be assessed under field conditions before they are broadly adopted.

- The costs of some IPM practices are considerably higher than chemical pesticides which reduce adoption by growers.
- Customers in general have limited knowledge of IPM, though they are willing to pay more for IPM produced products when informed of the benefits of this production approach.

From Economic sustainability of farms, forests, and other enterprises:

- Weather
- Costs of production inputs
- Prices received for products sold
- Federal, state, and local regulations
- Vermont Farm Bureau has targeted equal treatment of equine agricultural operations in Vermont as a legislative priority (2009)

**From Understanding of, and preparedness for, natural, accidental and intentional disasters:**

• New laws and regulations are being introduced, and enforced almost constantly. The time has come when compliance is no longer voluntary but necessary.
• The level of threats from natural and manmade causes is ever-present, but not always predictable and dealing with them creates resource crises.
• Fairs are beginning to recognize the need for controlling flow of traffic with respect to animals and food vendors, and for educating the public about how best to minimize the risks.
• Sponsors of on-farm field days have become lax about practicing biosecurity, and many agricultural service providers bend to the culture of not inconveniencing hosts and attendees

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- ☑ After Only (post program)
- ☑ Retrospective (post program)
- ☑ Before-After (before and after program)
- ☐ During (during program)
- ☐ Time series (multiple points before and after program)
- ☑ Case Study
- ☐ Comparisons between program participants (individuals, group, organizations) and non-participants
- ☐ Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- ☐ Comparison between locales where the program operates and sites without program intervention
- ☑ Other (other data sources)

**Description**

A multi-year evaluation is planned for a grant funded program 'Farm Viabiltiy,' an agricultural business, business planning program. The evaluation will ask: How does ongoing Extension consultation/advisory assistance enhance a farm business that has already developed a business plan and is engaged in implementing its strategies? Effective ongoing evaluation should focus on measuring the longer term impact on improved farm revenues and/or expenditures realized by implementing practices recommended in the business plan. It is assumed that effective implementation contributes to increased revenues and/or decreased expenditures on VT farms (i.e. increased net earnings), and that the existence of more profitable farms in VT contributes to the state's improved economic condition. Healthy farms = a Healthy VT

**2. Data Collection Methods**

- ☑ Sampling
- ☑ Whole population

**Survey (Mail, Telephone, On-Site).**

- ☑ Mail
- ☑ Telephone
- ☑ On-Site

**Interview**

- ☑ Structured
- ☑ Unstructured

☑ Case Study
☑ Observation
☑ Portfolio Reviews
☐ Tests
☐ Journals
☐ Other

**Description**

## V(A). Planned Program (Summary)

**Program # 2**

### 1. Name of the Planned Program

Community Development and the Personal and Intellectual Development of Youth and Adults

### 2. Brief summary about Planned Program

Extension addresses community engagement, economic development, the identification of community assets and challenges to create sustainable and viable communities. Programming focuses on engaging youth in communities through service, building skills of business and community leaders, and building supports to meet the needs of the communities underserved or with at-risk populations.

The University of Vermont Extension 4-H program has been teaching youth leadership, citizenship and life skills, operating in all fourteen counties in Vermont through a variety of well-tested delivery modes. All programs are based on learning-by-doing approaches--the experiential model--that allow youth to experience mastery in subject matter, a sense of belonging to a group, a sense of generosity to those around them, and a sense of independence, with opportunities to take on leadership and make important decisions.Operation Military Kids (OMK) and the new initiative Science, Education and Technology (SET) are maturing components.

Projects under this planned program are designed to bring together people with diverse interests to share perceived problems, find common ground, and identify resources and tools for prioritizing and solving those problems through a cooperative, collaborative effort. The 4-H program is project-based curriculum focused on life skills education over 6-8 hours of sequential learning and perhaps years of contact with a trained leader.

Two-thirds of participants live in towns with fewer than 10,000 people, and an additional 12% live on farms, reflecting the rural and small-town audiences primarily served. Over half of all youth served live in racially and ethnically mixed communities. 4-H serves youth in both traditional 4-H subjects and in new and growing area of interests, such as technology as outlined with the S.E.T. initiative, through 4-H clubs, afterschool programs and other innovative venues.Capacity for communities to serve families at risk are served through the Coping with Separation and Divorce (COPE) through family courts and migrant families with Migrant Education programs. New efforts are targeting outcomes for foster, adoptive and kin-care parents and the youth they care for focusing on positive outcomes for children. Operation Military Kids exists to educate Vermont communities on the unique experiences and challenges of military life and its impact on families.

Communities are building the capacity of its members to meet community needs through involvement is local efforts. Extension provides leadership skills building and involvement in local government and other community focused project based programs. Vermont's economy relies on small business. Disabled farmers and rural individuals are receiving services in their communities that enable them to stay employed in their current fields with or without accommodations or identify other employment opportunities their skills can be used keeping them employed often in their local communities.

**3. Program existence :**

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

**4. Program duration :**

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :**

- ◉ Yes
- ○ No

**6. Expending other than formula funds or state-matching funds :**

- ◉ Yes
- ○ No

**V(B). Program Knowledge Area(s)**

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 124 | Urban Forestry | 3% | | 0% | |
| 608 | Community Resource Planning and Development | 16% | | 0% | |
| 723 | Hazards to Human Health and Safety | 7% | | 0% | |
| 802 | Human Development and Family Well-Being | 8% | | 0% | |
| 805 | Community Institutions, Health, and Social Services | 7% | | 0% | |
| 806 | Youth Development | 59% | | 0% | |
| | **Total** | 100% | | 0% | |

## V(C). Planned Program (Situation and Scope)

**1. Situation and priorities**

**Situation and priorities from each of the Parent plans (problem driven logic models) as follows:**

**From Farm and rural residents with disabilities face challenges:**

Farm and rural residents with disabilities face challenges maintaining and securing employment. Agriculture, related industries, and rural residents of Vermont have a high rate of injuries and other disabling conditions. Individuals with disabilities experience a high rate of unemployment; however, individuals with disabilities can and want to work.

Farmers in Northern New England have a high rate of injuries and other disabling conditions. Individuals with disabilities experience a high rate of unemployment; however, individuals with disabilities can and want to work.

**From Provide opportunities for positive youth and family development:**

4-H programming combines the experiential learning model with project-based education, both key strategies for Positive Youth Development identified in Critical Hours (Miller, 2003). Project-based curriculum is focused on life skills education over 6-8 hours of sequential learning and perhaps years of contact with a trained volunteer leader. Through these opportunities, youth gain a sense of belonging, sense of mastery, sense of independence, and an opportunity to help others (sense of generosity). After school and out of school programs make a positive difference for youth participants. Effects of the programming are stronger "for those individuals who need the help most and have the fewest options (Miller, 2003 p.59)." The greatest benefit is for those who attend the most hours over the most years. This is even more important for older youth, as there are fewer opportunities for teens as they age outside of school. The Tufts Study on Positive Youth Development indicates that "combining sports and youth development programs such as 4-H, Boys and Girls Clubs, YMCA, Big Brothers/Big Sisters, Scouting, etc..., was one of the most effective ways to promote positive youth development and to prevent problems (Lerner, p9, 2008) .

Personal mastery of Life Skills (Targeting Life Skills Model, 1998) is important for both Positive Youth and Family Development. Life Skills are abilities individuals can learn that will help them to be successful in living a productive and satisfying life. The goal is to provide developmentally appropriate opportunities for youth and adults to experience life skills, to practice them until they are learned, and be able to use them as necessary throughout a lifetime. Through the experiential learning process, youth and adults internalize the knowledge and gain the ability to apply the skills appropriately. Our programming will focus on eight of these Life Skills including: Decision Making; Wise Use of Resources; Communication; Accepting Differences; Leadership; Useful/Marketable Skills; Healthy Lifestyle Choices and Self-Responsibility.

Science, Engineering and Techology (SET) focus: American Youth are losing ground in SET compared to peers in other nations. Although the United States is currently the world's economic and military leader, too many young Americans do not have the science, engineering and technology career skills necessary to succeed and meet our country's needs in the future. A recent report of the National Academy of Sciences (2006), Rising Above the Gathering Storm, speaks to the urgent need to enhance academic and vocational experiences in science, engineering, and technology. American inventiveness and competitiveness in the global marketplace are at risk as student interest and performance in SET disciplines declines at the same time that SET literacy and mastery expectations rise (Business Roundtable, 2005). The increasing pace and complexity of life in a technological age demands engaged, innovative, and cooperating citizens" (Silliman, 2007).

When families under-go major transitions such as changing caregivers, separation and divorce, parents benefit from ideas and strategies to lesson the impact of the changes on the children.

**From Provide positive community engagement opportunities for youth and adults:**

Studies indicate a number of problems ranging from declining levels of voter participation and public apathy toward elections to decreasing interest in volunteer activities and community groups. They also document the younger generation's apparent disinterest in public affairs and lack of knowledge about our political system. Robert Putnam has quantified this civic disengagement, documenting a 25-30 year decline in membership in civic-oriented organizations. Bowling Alone he states that, "Americans' affiliations with civic institutions with a face-to-face quality - from churches to service groups like Kiwanis and PTAs - have declined over the last generation."

Youth in Decision-Making: A study on the impacts of youth on adults and organizations (Zeldin, McDaniel, Topitzes, and Calvert, 2000) states, "Expanding community capacity means that a variety of organizations and agencies have to involve young people in decision-making. This has not yet happened ... As more organizations adopt youth governance into their operating philosophy in the future, a critical mass of expertise will grow." In addition, The connection of youth development to community development is critical; by integrating youth into their communities, they feel empowered, relevant and valued. In return,

the community benefits from vital services provided by the youth.

The Migrant Education Recruitment Program (MEP) serves children and youth who move with family member(s) or guardian(s) to obtain or in search of temporary or seasonal work in agriculture or logging. MEP recognizes that a positive relationship between parents and school is essential to the success of their children's academic life. In order to further and support this positive relationship, MEP offers statewide support to migrant families.

The Vermont military community is geographically dispersed and needs community support as the role of National Guardsmen and women has changed over recent years. The Operation: Military Kid (OMK) program supports military youth and families by establishing community partnerships that will connect and educate people by creating community support; delivering opportunities to youth and families; supporting military kids; collaborating with community partners; educating the public, including the education community; and incorporating military families into existing community resources.

Urban and community forests provide ecological services that benefit the environmental, economic and social conditions of Vermont communities. This resource, which includes trees in our backyards, along our streets, in parks and town greens and in municipal forests can directly enhance the atmosphere and transform the surrounding environment through atmospheric carbon dioxide (CO2) reduction and energy conservation, airborne pollutant absorption and interception, and microclimate modifications. They protect and enhance water quality and supply by filtering out pollutants, controlling stormwater runoff, enabling water infiltration and reducing erosion. They can help offset the high costs of fossil fuel consumption by reducing dependence on summer air conditioning and winter heating. They improve the economic development through increases in property values, rental occupancy rates, consumer patronage and expenditure, and job market. When urban and community forests are well planned and managed, communities can begin to reap the many benefits they provide. These benefits may not seem important to a state that is approximately 78% forested, however, with 38% of Vermont's residents living in urban areas the need to better advocate for this public resource is becoming increasingly evident. Furthermore, with the increasing urbanization of Vermont, up 22% from 1990, the canopy cover over Vermont communities is decreasing and in many cases the resource is in poor health. As the state continues to develop and we strive to keep our downtowns vibrant our urban and community forests become more important. We have identified two issues that hinder the effective planning and management of Vermont's urban and community forestry resource: 1) a need for greater awareness that urban and community forests that are planned and designed as green infrastructure become valuable components of sustainable communities, and 2) a need for political and human capital to manage this resource.

**2. Scope of the Program**

- ☑ In-State Extension
- ☐ In-State Research
- ☐ Multistate Research
- ☑ Multistate Extension
- ☐ Integrated Research and Extension
- ☐ Multistate Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

**1. Assumptions made for the Program**

**Bold header is group plan name (issue or problem being addressed) with assumption(s) listed below:**

**From Farm and rural residents with disabilities face challenges:**

• Individuals living in rural areas have difficulty accessing services

**From Provide opportunities for positive youth and family development:**

•Materials included in the 4-H National Curriculum Collection address Life Skills education; more hours of programming with a caring adult carries a greater benefit; youth in limited resources families have fewer options for opportunities to gain mastery of life skills.

•SET: Much of the success will depend upon partnering and pooling resources with businesses and colleagues in SET related organizations.

COPE**:** The program will be mandated by the court system.

**From Provide positive community engagement opportunities for youth and adults:**

•Community Organizations and Agencies collaborate with UVM Extension to enhance programming for youth. •Volunteers are available to assist in program delivery for community youth.

•Youth want to engage with community organizations and agencies to address issues of the youth population

• It is believed that participants will gain leadership skills and develop successful projects that will enable them to move their communities toward solving self identified issues.

**2. Ultimate goal(s) of this Program**

Improve community collaboration to address issues and build community assets (condition)

• Farm and rural residents with disabilities secure and maintain gainful employment (Action)

• Citizens of target communities actively participate in local government and/or community groups where policy decisions are made. (Action)

• Community members will mobilize more effectively to better understand and solve community problems (Action)

• Youth are involved in communities as active, productive citizens (Action)

A Larger and more diverse pool of youth are pursuing SET careers through post secondary education and improved SET literacy in the general population. (Condition)

• Youth apply SET learning in their lives and demonstrate interests and aspirations toward SET careers (Action)
• Increased literacy and interest (awareness, attitudes, understanding and aspirations) in science, engineering and technology (SET) among youth and improved related knowledge, skills, and abilities for use in their lives and future (Learning)

Improve personal and intellectual development of Vermont youth. (Condition)

• Families under transition lessen the impact of changes on their children. (Action)

• Youth and adults gain mastery of life skills (Action)

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 26.3 | 0.0 | 0.0 | 0.0 |
| 2013 | 26.3 | 0.0 | 0.0 | 0.0 |
| 2014 | 26.3 | 0.0 | 0.0 | 0.0 |
| 2015 | 26.3 | 0.0 | 0.0 | 0.0 |
| 2016 | 26.3 | 0.0 | 0.0 | 0.0 |

## V(F). Planned Program (Activity)

### 1. Activity for the Program

•4-H Positive Youth Development Program: Help youth acquire Life Skills in the following areas: Decision Making; Critical Thinking; Problem-Solving; Communication; Goal-Setting; and Skills for Everyday Living to succeed as adults. Delivery Methods: 6-8 sequential learning hours using experiential learning techniques for in- school, afterschool, or out-of-school settings.

•Operation Military Kids (OMK) exists to educate Vermont communities on the unique experiences and challenges of military life and its impact on families, while providing positive opportunities for youth. Ready, Set, Go! Operation: Military Kids Vermont OMK-VT aims to establish community partnerships that will connect and educate people by: Creating community support, delivering opportunities to youth and families, supporting military kids, collaborating with community partners, educating the public, including the education community, and incorporating military families into existing community resources.

•S.E.T. Activities: 4-H SET will begin to show how science and engineering issues affect youths' lives and prepare a future generation of scientists and engineers. The 4-H SET program will present 4-H with a new opportunity to connect to the LGU's SET research community and integrate with current youth workforce development initiatives.

•Downtown Business District Analysis: This program provides the community with analytical techniques that can be put to work immediately in economic revitalization efforts. The process requires input from local residents so that recommendations reflect both market conditions as well as the preferences of the community. Delivery Methods: Group meetings and discussion groups in community.

•Community Leadership: Assessing, addressing and expanding community capacity through leadership and public policy education efforts including building--and education members and clientele of--coalitions and collaboratives.

•Coping with Separation and Divorce (COPE): Parent education for parents of minor children who have filed for separation, divorce, dissolving of a civil union, parentage, changes in rights and responsibilities concerning their children. This is a court mandated program.

•EnviroQuest: Help youth acquire Life Skills in the following areas: Decision Making; Critical Thinking; Problem-Solving; Communication; Goal-Setting; and Skills for Everyday Living to succeed as adults. Delivery Methods: 6-8 sequential learning hours using experiential learning techniques for in-

school, afterschool, or out-of-school settings.

•Migrant Education Recruitment Program (MEP): To ensure that children of migrant farm workers, and qualifying youth under age 22, are aware of the educational support services available to them. Delivery Methods: Outreach to schools, agricultural employers, and social service agencies throughout the state.

•Vermont AgrAbility Project: To make recommendations that can be used by farmers with disabilities to maintain employment, through development of accommodations. Delivery Methods: Process involves recruitment of eligible individuals through referrals. Intake information is recorded on farms provided by the National AgrAbility Project. Site visits are the primary means of contact.

•Rural and Agricultural VocRehab Program: To assist individuals with disabilities living in rural areas and those in agricultural professions or self-employmed by providing them with a variety of services tailored to their needs in order to maintain or obtain their selected employment outcome. Delivery Methods: Process involves recruitment of eligible individuals through referrals, assessment, writing up a plan of action, and providing services for eligible individuals. Printed materials and individual technical assistance are offered to strengthen the capacity of individuals to maintain or to prepare for meaningful work.

•Take Charge (TC/RC): Helping community adult members to gain the skills necesary to be confident enough to take part in town government by ultimately competing for town government leadership positions. Delivery Methods: Meetings, discussion groups.

•Town Officers Education Conference & Municipal Officers Management (TOEC/MOMS): Local town officers, decisionmakes and officials receive education and tools to improve job performance and mangement, addressing topics from new legislation to handling difficult customers. Delivery methods: Each one-day conference is held annually, at multiple sites.

•Vermont Urban and Community Forestry program :A joint initiative between the University of Vermont Extension and the Department of Forests, Parks and Recreation. The mission of the program is to promote the stewardship of the urban and rural landscapes to enhance the quality of life in Vermont communities. The program provides educational, technical and financial assistance in the management of trees and forests, in and around the built landscape. Delivery Methods: Classes, meetings, various media, community volunteer projects.

•Foster, Adoptive and Kin Care Partnership: Enhance outcomes for children in foster, adoptive and kin care homes. Delivery Methods: Curriculum and workshop series

**2. Type(s) of methods to be used to reach direct and indirect contacts**

**Extension**

| Direct Methods | Indirect Methods |
|---|---|

| | |
|---|---|
| ☑ Education Class | ☐ Public Service Announcement |
| ☑ Workshop | ☐ Billboards |
| ☑ Group Discussion | ☑ Newsletters |
| ☑ One-on-One Intervention | ☑ TV Media Programs |
| ☐ Demonstrations | ☑ Web sites |
| ☑ Other 1 (Train the Trainer) | ☐ Other 1 |
| ☑ Other 2 (4-H Afterschool, club) | ☑ Other 2 (radio ed. spots) |

**3. Description of targeted audience**

- 4-H: Adult Volunteers
- 4-H: Camp Board Directors
- 4-H: Youth Volunteers
- Adults
- Age 19 - 24 Young Adult
- Age 25 - 60 Adult
- Agriculture: Farm Families
- Agriculture: Farmers
- Agriculture: Farmers w/disabilities
- Agriculture: Service Providers
- Communities: Educators
- Communities: Local Officials/Leaders
- Communities: Non-Governmental Organizations
- Communities: Schools
- Community leaders and citizens
- Extension: Faculty/Staff
- Funders
- Public: Families
- Public: General
- Public: Parents
- Public: Small Business Owners/Entreprenuers
- Public: Volunteers
- Public: VT SOUL Tree Stewards
- USDA personnel
- 4-H Members (Youth)
- 4-H Special Interest or Short-Term Program Participants (Youth)
- 4-H: Youth
- Age 13 - 18 Youth
- Age 6 - 12 School Age
- Age 8 - 18 Youth
- Migrant In School Youth
- Migrant Out of School Youth
- School Enrichment Program Participants (Youth)
- School Grade: 5
- Youth

## V(G). Planned Program (Outputs)

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact**

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2012 | 5000 | 20000 | 2500 | 1000 |
| 2013 | 5000 | 20000 | 2500 | 1000 |
| 2014 | 5000 | 20000 | 2500 | 1000 |
| 2015 | 5000 | 20000 | 2500 | 1000 |
| 2016 | 5000 | 20000 | 2500 | 1000 |

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

**3. Expected Peer Review Publications**

| Year | Research Target | Extension Target | Total |
|---|---|---|---|
| 2012 | 0 | 1 | 1 |
| 2013 | 0 | 1 | 1 |
| 2014 | 0 | 1 | 1 |
| 2015 | 0 | 1 | 1 |
| 2016 | 0 | 1 | 1 |

## V(H). State Defined Outputs

### 1. Output Target

- 4-H Afterschool

  **2012:**12 **2013:**12 **2014:**12 **2015:**12 **2016:**12

- 4-H Club

  **2012:**110 **2013:**110 **2014:**110 **2015:**110 **2016:**110

- 4-H Day Camp

  **2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- 4-H Overnight camp

  **2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- 4-H School enrichment

  **2012:**22 **2013:**22 **2014:**22 **2015:**22 **2016:**22

- 4-H Short-term/special interest

  **2012:**47 **2013:**47 **2014:**47 **2015:**50 **2016:**50

- Class/course

  **2012:**8 **2013:**8 **2014:**8 **2015:**8 **2016:**8

- Conference

  **2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- Consultations

  **2012:**400 **2013:**400 **2014:**400 **2015:**400 **2016:**400

- Discussion group

**2012:**40 **2013:**40 **2014:**40 **2015:**40 **2016:**40

- Field site visit

**2012:**30 **2013:**30 **2014:**30 **2015:**30 **2016:**30

- Funding request

**2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**1

- Presentations

**2012:**30 **2013:**30 **2014:**30 **2015:**30 **2016:**30

- Publication - fact sheet

**2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**1

- Publication - newsletter

**2012:**90 **2013:**90 **2014:**90 **2015:**90 **2016:**90

- Publication - newsprint article

**2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

- Radio Spots/program (educational

**2012:**6 **2013:**6 **2014:**10 **2015:**10 **2016:**10

- TV segment/ATF

**2012:**12 **2013:**12 **2014:**12 **2015:**10 **2016:**10

- Train the Trainer sessions

**2012:**6 **2013:**6 **2014:**6 **2015:**6 **2016:**6

- Web Page

**2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**1

- Workshop - series

**2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- Workshop - single session

**2012:**75 **2013:**75 **2014:**75 **2015:**75 **2016:**75

- Trainee delivered programming

**2012:**120 **2013:**120 **2014:**120 **2015:**120 **2016:**120

### V(I). State Defined Outcome

| O. No | Outcome Name |
|---|---|
| 1 | Increase number of communities establishing or expanding community tree program |
| 2 | increase in number of farm and rural residents with disabilities successfully served (ie case is closed) which is defined as having increased satisfaction with actual or potential employment and maintained or increased income |
| 3 | Increase number of 4-H staff self-reporting an increase in their ability to work with youth and adults to implement 4-H lifeskill development opportunities |
| 4 | Number of Migrant Education eligible students enrolled |
| 5 | Increase the number of program participants serving as leaders on Committees |
| 6 | Increase the number of youth who set and reach goals identified at the beginning of the 4-H year |
| 7 | Increase the number of clubs doing at least 6 hours of community service |
| 8 | Number of individuals (youth and volunteers) increasing knowledge and/or skills in content and careers (across subject areas ranging from animal science to environmental science to technology) |
| 9 | Increase the number of participants who plan and implement a program evaluation. |
| 10 | Increase the number of participants who report the results of their program evaluation. |
| 11 | increasing number of elected/appointed village, town or city officials that use information gained at TOEC in leadership and decision making |
| 12 | Increase the number of parents understanding family transition through parentage, divorce or separation who understand the impact of these changes on their children. |
| 13 | Number of participants report using skills learned in community setting |
| 14 | Number of farmers with disabilities maintaining employment |

| | |
|---|---|
| 15 | increase in number of youth reached with positive youth development programming demonstrate mastery for targeted life skills, including: Decision making; wise use of resources; communication; accepting differences; leadership; useful/marketable skills; healthy lifestyle choices; and/or self-responsibility |
| 16 | Number of volunteers demonstrating new techniques/activities in clubs and programs learned through 4-H training and developmemnt |

**Outcome #** 1

**1. Outcome Target**

Increase number of communities establishing or expanding community tree program

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

**3. Associated Knowledge Area(s)**

- ☑ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 2

**1. Outcome Target**

increase in number of farm and rural residents with disabilities successfully served (ie case is closed) which is defined as having increased satisfaction with actual or potential employment and maintained or increased income

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**55 **2013:**75 **2014:**75 **2015:**75 **2016:**75

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☑ 723 - Hazards to Human Health and Safety
- ☑ 802 - Human Development and Family Well-Being
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 3

**1. Outcome Target**

Increase number of 4-H staff self-reporting an increase in their ability to work with youth and adults to implement 4-H lifeskill development opportunities

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**11 | **2013:**11 | **2014:**11 | **2015:**11 | **2016:**11 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 4

**1. Outcome Target**

Number of Migrant Education eligible students enrolled

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| | | | | |
|---|---|---|---|---|
| **2012:**150 | **2013:**150 | **2014:**150 | **2015:**200 | **2016:**200 |

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☑ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 5

**1. Outcome Target**

Increase the number of program participants serving as leaders on Committees

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| | | | | |
|---|---|---|---|---|
| **2012:**2 | **2013:**2 | **2014:**2 | **2015:**2 | **2016:**2 |

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☑ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety

- ☐ 802 - Human Development and Family Well-Being
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 6

**1. Outcome Target**

Increase the number of youth who set and reach goals identified at the beginning of the 4-H year

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**750 **2013:**750 **2014:**750 **2015:**750 **2016:**750

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 7

**1. Outcome Target**

Increase the number of clubs doing at least 6 hours of community service

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**125 **2013:**125 **2014:**125 **2015:**125 **2016:**125

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 8

**1. Outcome Target**

Number of individuals (youth and volunteers) increasing knowledge and/or skills in content and careers (across subject areas ranging from animal science to environmental science to technology)

**2. Outcome Type :**

- ◉ Change in Knowledge Outcome Measure
- ○ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**2400 **2013:**2400 **2014:**2400 **2015:**2400 **2016:**2400

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 9

**1. Outcome Target**

Increase the number of participants who plan and implement a program evaluation.

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**4 **2013:**4 **2014:**4 **2015:**4 **2016:**4

**3. Associated Knowledge Area(s)**

- [ ] 124 - Urban Forestry
- [ ] 608 - Community Resource Planning and Development
- [ ] 723 - Hazards to Human Health and Safety
- [x] 802 - Human Development and Family Well-Being
- [ ] 805 - Community Institutions, Health, and Social Services
- [ ] 806 - Youth Development

**4. Associated Institute Type(s)**

- [x] 1862 Extension
- [ ] 1862 Research

**Outcome #** 10

**1. Outcome Target**

Increase the number of participants who report the results of their program evaluation.

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (•) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**4 **2013:**4 **2014:**4 **2015:**4 **2016:**4

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☑ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 11

**1. Outcome Target**

increasing number of elected/appointed village, town or city officials that use information gained at TOEC in leadership and decision making

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**5 | **2013:**5 | **2014:**5 | **2015:**5 | **2016:**5 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☑ 608 - Community Resource Planning and Development
- ☑ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 12

**1. Outcome Target**

Increase the number of parents understanding family transition through parentage, divorce or separation who understand the impact of these changes on their children.

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**2000

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☑ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 13

**1. Outcome Target**

Number of participants report using skills learned in community setting

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**500 **2013:**500 **2014:**500 **2015:**500 **2016:**500

**3. Associated Knowledge Area(s)**

- ☑ 124 - Urban Forestry
- ☑ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety

- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 14

**1. Outcome Target**

Number of farmers with disabilities maintaining employment

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**50 | **2013:**50 | **2014:**50 | **2015:**50 | **2016:**50 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☑ 723 - Hazards to Human Health and Safety
- ☑ 802 - Human Development and Family Well-Being
- ☑ 805 - Community Institutions, Health, and Social Services
- ☐ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 15

**1. Outcome Target**

increase in number of youth reached with positive youth development programming demonstrate mastery for targeted life skills, including: Decision making; wise use of resources; communication; accepting differences; leadership; useful/marketable skills; healthy lifestyle choices; and/or self-responsibility

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**2000 **2013:**2000 **2014:**2000 **2015:**2000 **2016:**2000

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 16

**1. Outcome Target**

Number of volunteers demonstrating new techniques/activities in clubs and programs learned through 4-H training and developmemnt

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**400 **2013:**400 **2014:**400 **2015:**400 **2016:**400

**3. Associated Knowledge Area(s)**

- ☐ 124 - Urban Forestry
- ☐ 608 - Community Resource Planning and Development
- ☐ 723 - Hazards to Human Health and Safety
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services
- ☑ 806 - Youth Development

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

## V(J). Planned Program (External Factors)

**1. External Factors which may affect Outcomes**

- ☐ Natural Disasters (drought, weather extremes, etc.)
- ☑ Economy
- ☑ Appropriations changes
- ☑ Public Policy changes
- ☑ Government Regulations
- ☑ Competing Public priorities
- ☑ Competing Programmatic Challenges
- ☑ Populations changes (immigration, new cultural groupings, etc.)
- ☐ Other

**Description**

**From Farm and rural residents with disabilities face challenges:**
Transportation, time off from work for medical appointments, minimal to no services offered in rural areas, and lack of health insurance are some of the many barriers to employment that individuals with disabilities face every day
Lack of expertise and experience in New England by public and private agencies to make site visits and make recommendations of accommodations to continue employment of farmers with disabilities represents major barriers to farmers to achieve vocational goals

**From Provide opportunities for positive youth and family development:**
Transportation is often an issue for rural youth to participate in out of school hours programming. Meeting nutritional needs of youth is out of school settings is a problem.

**From Provide positive community engagement opportunities for youth and adults:**
Transportation is often an issue for rural youth to participate in out of school hours programming. Apathy is learned from community environment

## V(K). Planned Program (Evaluation Studies and Data Collection)

**1. Evaluation Studies Planned**

- ☑ After Only (post program)
- ☑ Retrospective (post program)

- ☑ Before-After (before and after program)
- ☑ During (during program)
- ☐ Time series (multiple points before and after program)
- ☐ Case Study
- ☐ Comparisons between program participants (individuals, group, organizations) and non-participants
- ☐ Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- ☐ Comparison between locales where the program operates and sites without program intervention
- ☐ Other

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- ☑ Sampling
- ☐ Whole population

**Survey (Mail, Telephone, On-Site).**

- ☐ Mail
- ☐ Telephone
- ☑ On-Site

**Interview**

- ☑ Structured
- ☑ Unstructured

- ☐ Case Study
- ☑ Observation
- ☑ Portfolio Reviews
- ☐ Tests
- ☑ Journals
- ☑ Other (record books, recognition applic)

**Description**

The Youth development effort has shifted their evaluation in 2011 to collect data on demonstration of life skills by the youth and demonstration of skills from its trained volunteers from self reporting. Observation, record books and club reports will be the primary sources of this information.

## V(A). Planned Program (Summary)

**Program # 3**

**1. Name of the Planned Program**

Climate Change

**2. Brief summary about Planned Program**

Climate change has the potential to have drastic impacts on Vermont agriculture, Northern forests, Land-Use choices, net population change, and the overall Vermont rural economy.

We will focus our VT-AES scientists toward understanding and modeling these changes, mitigating negative impacts if possible, and positioning our agricultural-based rural economy to remain competitive in the global marketplace.

**3. Program existence :**

- (●) New (One year or less)
- ( ) Intermediate (One to five years)
- ( ) Mature (More than five years)

**4. Program duration :**

- ( ) Short-Term(One year or less)
- ( ) Medium-Term (One to five years)
- ( ) Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :**

- (●) Yes
- ( ) No

**6. Expending other than formula funds or state-matching funds :**

- (●) Yes
- ( ) No

### V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 101 | Appraisal of Soil Resources | 0% | | 2% | |
| 102 | Soil, Plant, Water, Nutrient Relationships | 0% | | 4% | |
| 112 | Watershed Protection and Management | 0% | | 1% | |
| 122 | Management and Control of Forest and Range Fires | 0% | | 6% | |
| 132 | Weather and Climate | 0% | | 3% | |
| 133 | Pollution Prevention and Mitigation | 0% | | 1% | |
| 136 | Conservation of Biological Diversity | 0% | | 9% | |
| 201 | Plant Genome, Genetics, and Genetic Mechanisms | 0% | | 6% | |
| 203 | Plant Biological Efficiency and Abiotic Stresses Affecting Plants | 0% | | 17% | |
| 205 | Plant Management Systems | 0% | | 7% | |
| 206 | Basic Plant Biology | 0% | | 12% | |
| 212 | Pathogens and Nematodes Affecting Plants | 0% | | 11% | |
| 213 | Weeds Affecting Plants | 0% | | 6% | |
| 215 | Biological Control of Pests Affecting Plants | 0% | | 5% | |
| 216 | Integrated Pest Management Systems | 0% | | 1% | |
| 601 | Economics of Agricultural Production and Farm Management | 0% | | 1% | |
| 605 | Natural Resource and Environmental Economics | 0% | | 4% | |
| 609 | Economic Theory and Methods | 0% | | 2% | |
| 610 | Domestic Policy Analysis | 0% | | 1% | |
| 802 | Human Development and Family Well-Being | 0% | | 1% | |
| | **Total** | 0% | | 100% | |

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

VT-AES researchers have engaged with the maple industry, the agricultural production industries, and the horticultural industry regarding the impact of predicted climate changes on current production. There is considerable concern regarding the advance of invasive insect pests as seasonal

warming increases, season length increases, and severity of winters lessens. VT-AES researchers are also engaged in the genetic analyses of invasive plant species, and are working to identify mitigate this threat to the environment. We have initiated research regarding the generation of greenhouse gas emissions from farm animals and through soil processes.

**2. Scope of the Program**

- ☐ In-State Extension
- ☑ In-State Research
- ☐ Multistate Research
- ☐ Multistate Extension
- ☐ Integrated Research and Extension
- ☐ Multistate Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

**1. Assumptions made for the Program**

Assumptions:

1. Alterations in weather patterns that we have experienced over the past 5 years are indicative of change. Seasons will be milder, spring, summer and winter will be wetter; there will be less snowfall and ground cover in winter.

2. The advance northward of invasive insects along the east coast will continue. There are several introductions that threaten the northern forest, particularly the maple industry.

3. The striking changes in the composition of the northern forest over the past 30 years is an indicator in the changes to agriculture, forests and land utilization that will occur in the northeast.

4. Research in these areas by UVM scientists will aid in understanding and predicting the nature of these changes, and will assist our communities in effective planning and mitigation.

**2. Ultimate goal(s) of this Program**

Ultimate Goal

Position Vermont land-based economic sectors to be maximally competitive, and maximally productive, in the global marketplace.

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 0.0 | 0.0 | 5.9 | 0.0 |
| 2013 | 0.0 | 0.0 | 6.4 | 0.0 |
| 2014 | 0.0 | 0.0 | 6.4 | 0.0 |

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2015 | 0.0 | 0.0 | 6.4 | 0.0 |
| 2016 | 0.0 | 0.0 | 6.4 | 0.0 |

## V(F). Planned Program (Activity)

### 1. Activity for the Program

Invasive Pests - Monitoring of the Asian Long Horned Beetle & Hemlock Woolly Adelgid; interception and prevention if possible, mitigation through work with bioactive fungi and natural enemy species; work with the US forest service, US-ARS, and the maple industry.

Maple Production - research and extension efforts at the Proctor Maple Center are directed at extending the sugaring season, maximizing yield, and minimizing disease to trees.

Monitoring of the Eastern Forests - Species change and demarkcation levels are being observed, documented and modeled for northern forests through remote sensing and on-the-ground observations.

Invasive Plants - research will continue on the genetic and physiological basis for "invasiveness" of problem plant species and introductions.

Greenhouse Gas Emissions - research has been initiated to evaluate microbial population dynamics in ruminant farm animals in an effort to control/minimize the production of methane and other greenhouse gases. Parallel efforts are underway to understand soil processes that affect the carbon cycle, and that may sequester carbon in soil sinks.

### 2. Type(s) of methods to be used to reach direct and indirect contacts

**Extension**

| Direct Methods | Indirect Methods |
|---|---|
| ☐ Education Class | ☐ Public Service Announcement |
| ☐ Workshop | ☐ Billboards |
| ☐ Group Discussion | ☐ Newsletters |
| ☐ One-on-One Intervention | ☐ TV Media Programs |
| ☐ Demonstrations | ☐ Web sites |
| ☑ Other 1 (competitive research) | ☑ Other 1 (peer-reviewed publications) |
| ☑ Other 2 (professional conferences) | ☐ Other 2 |

### 3. Description of targeted audience

Researchers, Extension Faculty and Staff
Maple producers
Agriculture - Farmers

## V(G). Planned Program (Outputs)

### 1. Standard output measures

**Target for the number of persons(contacts) to be reached through direct and indirect contact**

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2012 | 100 | 500 | 0 | 0 |
| 2013 | 100 | 500 | 0 | 0 |
| 2014 | 100 | 500 | 0 | 0 |
| 2015 | 100 | 500 | 0 | 0 |
| 2016 | 100 | 500 | 0 | 0 |

### 2. (Standard Research Target) Number of Patent Applications Submitted

**2012:**1 **2013:**3 **2014:**0 **2015:**0 **2016:**0

### 3. Expected Peer Review Publications

| Year | Research Target | Extension Target | Total |
|---|---|---|---|
| 2012 | 8 | 0 | 8 |
| 2013 | 12 | 0 | 12 |
| 2014 | 12 | 0 | 12 |
| 2015 | 15 | 0 | 15 |
| 2016 | 15 | 0 | 15 |

## V(H). State Defined Outputs

### 1. Output Target

## V(I). State Defined Outcome

| O. No | Outcome Name |
|---|---|
| 1 | identify mitigate the invasive species threat to the environment |
| 2 | research regarding the generation of greenhouse gas emissions from farm animals and through soil processes |

**Outcome #** 1

**1. Outcome Target**

identify mitigate the invasive species threat to the environment

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

**3. Associated Knowledge Area(s)**

- ☐ 101 - Appraisal of Soil Resources
- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 112 - Watershed Protection and Management
- ☐ 122 - Management and Control of Forest and Range Fires
- ☐ 132 - Weather and Climate
- ☐ 133 - Pollution Prevention and Mitigation
- ☑ 136 - Conservation of Biological Diversity
- ☑ 201 - Plant Genome, Genetics, and Genetic Mechanisms
- ☐ 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- ☑ 205 - Plant Management Systems
- ☐ 206 - Basic Plant Biology
- ☐ 212 - Pathogens and Nematodes Affecting Plants
- ☐ 213 - Weeds Affecting Plants
- ☐ 215 - Biological Control of Pests Affecting Plants
- ☐ 216 - Integrated Pest Management Systems
- ☐ 601 - Economics of Agricultural Production and Farm Management
- ☐ 605 - Natural Resource and Environmental Economics
- ☐ 609 - Economic Theory and Methods
- ☐ 610 - Domestic Policy Analysis
- ☐ 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- ☐ 1862 Extension
- ☑ 1862 Research

**Outcome #** 2

**1. Outcome Target**

research regarding the generation of greenhouse gas emissions from farm animals and through soil processes

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

**3. Associated Knowledge Area(s)**

- [x] 101 - Appraisal of Soil Resources
- [x] 102 - Soil, Plant, Water, Nutrient Relationships
- [x] 112 - Watershed Protection and Management
- [ ] 122 - Management and Control of Forest and Range Fires
- [x] 132 - Weather and Climate
- [ ] 133 - Pollution Prevention and Mitigation
- [ ] 136 - Conservation of Biological Diversity
- [ ] 201 - Plant Genome, Genetics, and Genetic Mechanisms
- [ ] 203 - Plant Biological Efficiency and Abiotic Stresses Affecting Plants
- [ ] 205 - Plant Management Systems
- [ ] 206 - Basic Plant Biology
- [ ] 212 - Pathogens and Nematodes Affecting Plants
- [ ] 213 - Weeds Affecting Plants
- [ ] 215 - Biological Control of Pests Affecting Plants
- [ ] 216 - Integrated Pest Management Systems
- [ ] 601 - Economics of Agricultural Production and Farm Management
- [ ] 605 - Natural Resource and Environmental Economics
- [ ] 609 - Economic Theory and Methods
- [ ] 610 - Domestic Policy Analysis
- [ ] 802 - Human Development and Family Well-Being

**4. Associated Institute Type(s)**

- [ ] 1862 Extension
- [x] 1862 Research

## V(J). Planned Program (External Factors)

**1. External Factors which may affect Outcomes**

- ☑ Natural Disasters (drought, weather extremes, etc.)
- ☑ Economy
- ☑ Appropriations changes
- ☑ Public Policy changes
- ☑ Government Regulations
- ☐ Competing Public priorities
- ☐ Competing Programmatic Challenges
- ☐ Populations changes (immigration, new cultural groupings, etc.)
- ☐ Other

**Description**

{NO DATA ENTERED}

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- ☐ After Only (post program)
- ☑ Retrospective (post program)
- ☐ Before-After (before and after program)
- ☐ During (during program)
- ☐ Time series (multiple points before and after program)
- ☐ Case Study
- ☐ Comparisons between program participants (individuals, group, organizations) and non-participants
- ☐ Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- ☐ Comparison between locales where the program operates and sites without program intervention
- ☑ Other (peer review)

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- ☑ Sampling
- ☐ Whole population

**Survey (Mail, Telephone, On-Site).**

- ☐ Mail
- ☐ Telephone

- ☐ On-Site

**Interview**

- ☐ Structured
- ☐ Unstructured

☐ Case Study
☑ Observation
☐ Portfolio Reviews
☑ Tests
☐ Journals
☐ Other

**Description**

{NO DATA ENTERED}

## V(A). Planned Program (Summary)

**Program # 4**

**1. Name of the Planned Program**

Sustainable Energy

**2. Brief summary about Planned Program**

Energy independence and local distribution are hallmarks of the work of UVM Extension and the VT-AES at the UVM. The converting of oil seed crops into biodiesel for use in on-farm food and fuel production and the collaboration within communities to produce and use biofuels locally to meet some local needs are two hallmarks of the work in Vermont on biofuels. In addition there is ongoing work with direct burning technologies using locally available or produced biomass. These include the use of grasses as pellets and bricks, wood pellets, corn and wood gasification furnaces to meet heating needs during the winter months.

**3. Program existence :**

- ○ New (One year or less)
- ◉ Intermediate (One to five years)
- ○ Mature (More than five years)

**4. Program duration :**

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ○ Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :**

- ◉ Yes
- ○ No

**6. Expending other than formula funds or state-matching funds :**

- ◉ Yes
- ○ No

### V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 402 | Engineering Systems and Equipment | 20% | | 0% | |
| 601 | Economics of Agricultural Production and Farm Management | 80% | | 60% | |
| 604 | Marketing and Distribution Practices | 0% | | 25% | |
| 607 | Consumer Economics | 0% | | 15% | |
| | **Total** | 100% | | 100% | |

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

Both the economy and the environment consistently top the list of Vermonters' concerns, according to the annual Vermonter Poll (2008). These findings correspond with a recent survey undertaken as part of the Council on the Future of Vermont, a project of the Vermont Council on Rural Development with the goal of promoting public dialogue on values, challenges, opportunities, priorities and visions for Vermont. Survey findings include rankings of the top seven highest rated values and challenges (Center for Rural Studies, August 2008, http://crs.uvm.edu/survey/futureofvermont/CFV_Summary_Report.pdf ). Respondents placed the greatest value overall on "the state's working landscape and heritage." The greatest challenges were "the increasing costs of living, such as transportation, heating and electricity" followed closely by "the health and viability of Vermont farms and the agricultural sector."

Clearly, economic opportunities that support the working landscape are needed throughout the state. The Vermont Sustainable Agriculture Council's 2009 Annual Report and Recommendations (http://www.uvm.edu/sustainableagriculture/Documents/CouncilReport09.pdf) focus on two primary areas: strengthening Vermont's local food system and enhancing on-farm energy alternatives. Improved knowledge and skills leading to adoption of new practices can promote economic sustainability of farms, forests, natural-resource based enterprises, and communities. Specific problems that need to be addressed include the "Price and supply of fuel poses economic risk to farmers and rural communities".

University of Vermont Extension and VT-AES are uniquely positioned to deliver programs that integrate the latest research on agriculture, forestry, and enterprise development with practical applications at the community and individual business level.

### 2. Scope of the Program

- ☑ In-State Extension
- ☑ In-State Research
- ☐ Multistate Research
- ☐ Multistate Extension
- ☑ Integrated Research and Extension
- ☐ Multistate Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

**1. Assumptions made for the Program**

Price of fuel will remain unstable in the future. Price of fuel will continue to pose an economic risk to farmers. Economic advantages of on-farm biodiesel production will increase.

**2. Ultimate goal(s) of this Program**

Improve agricultural and environmental sustainability *(Condition)*

- Increase economic sustainability of farms, forests, and other enterprises that contribute to Vermont's working landscape *(Action)*

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 0.3 | 0.0 | 1.0 | 0.0 |
| 2013 | 0.3 | 0.0 | 1.9 | 0.0 |
| 2014 | 0.3 | 0.0 | 1.9 | 0.0 |
| 2015 | 0.3 | 0.0 | 1.9 | 0.0 |
| 2016 | 0.3 | 0.0 | 1.9 | 0.0 |

## V(F). Planned Program (Activity)

**1. Activity for the Program**

Energy Crop Research Projects

Renewable energy workshops

Economic feasibility and market potentials for oilseed and farm-scale biodiesel production

**2. Type(s) of methods to be used to reach direct and indirect contacts**

**Extension**

| Direct Methods | Indirect Methods |
|---|---|

| | |
|---|---|
| ☐ Education Class | ☐ Public Service Announcement |
| ☑ Workshop | ☐ Billboards |
| ☐ Group Discussion | ☑ Newsletters |
| ☐ One-on-One Intervention | ☑ TV Media Programs |
| ☐ Demonstrations | ☑ Web sites |
| ☑ Other 1 (Research sites) | ☐ Other 1 |
| ☐ Other 2 | ☐ Other 2 |

**3. Description of targeted audience**

- Adults
- Agriculture: Crop Producers
- Agriculture: Farmers

## V(G). Planned Program (Outputs)

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact**

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2012 | 100 | 0 | 0 | 0 |
| 2013 | 100 | 0 | 0 | 0 |
| 2014 | 100 | 0 | 0 | 0 |
| 2015 | 100 | 0 | 0 | 0 |
| 2016 | 100 | 0 | 0 | 0 |

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

**3. Expected Peer Review Publications**

| Year | Research Target | Extension Target | Total |
|---|---|---|---|
| 2012 | 2 | 0 | 2 |
| 2013 | 3 | 0 | 3 |
| 2014 | 3 | 0 | 3 |
| 2015 | 2 | 0 | 2 |
| 2016 | 2 | 0 | 2 |

## V(H). State Defined Outputs

### 1. Output Target

- Research Projects

**2012:**4 **2013:**4 **2014:**4 **2015:**4 **2016:**4

- Workshop - single session

**2012:**2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

## V(I). State Defined Outcome

| O. No | Outcome Name |
|---|---|
| 1 | Number of farmers who implement a new practice to begin production or to improve current oilseed production yield and quality |

**Outcome #** 1

**1. Outcome Target**

Number of farmers who implement a new practice to begin production or to improve current oilseed production yield and quality

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**30 **2013:**30 **2014:**30 **2015:**30 **2016:**30

**3. Associated Knowledge Area(s)**

- ☐ 402 - Engineering Systems and Equipment
- ☑ 601 - Economics of Agricultural Production and Farm Management
- ☐ 604 - Marketing and Distribution Practices
- ☐ 607 - Consumer Economics

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

## V(J). Planned Program (External Factors)

**1. External Factors which may affect Outcomes**

- ☑ Natural Disasters (drought, weather extremes, etc.)
- ☑ Economy
- ☐ Appropriations changes
- ☐ Public Policy changes
- ☑ Government Regulations
- ☐ Competing Public priorities
- ☐ Competing Programmatic Challenges
- ☐ Populations changes (immigration, new cultural groupings, etc.)
- ☐ Other

**Description**

## V(K). Planned Program (Evaluation Studies and Data Collection)

**1. Evaluation Studies Planned**

- ☐ After Only (post program)
- ☑ Retrospective (post program)
- ☑ Before-After (before and after program)
- ☐ During (during program)
- ☐ Time series (multiple points before and after program)
- ☐ Case Study
- ☐ Comparisons between program participants (individuals, group, organizations) and non-participants
- ☐ Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- ☐ Comparison between locales where the program operates and sites without program intervention
- ☐ Other

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- ☐ Sampling
- ☐ Whole population

**Survey (Mail, Telephone, On-Site).**

- ☐ Mail
- ☐ Telephone
- ☑ On-Site

**Interview**

- ☐ Structured
- ☐ Unstructured

- ☐ Case Study
- ☑ Observation
- ☐ Portfolio Reviews
- ☐ Tests
- ☐ Journals
- ☐ Other

**Description**

{NO DATA ENTERED}

## V(A). Planned Program (Summary)

**Program # 5**

**1. Name of the Planned Program**

Childhood Obesity

**2. Brief summary about Planned Program**

As a part of the overall efforts with UVM Extension and the VT-AES to meet growing food demand and addressing food security overall, there are special efforts to address youth and adult populations having the health and nutritional information they need to combat childhood obesity through making positive choices. The programs deal with subjects such as Healthy Eating, Food, Culture and Reading, and Diabetes education. EFNEP is part of this program effort but is not reported in this report due to no federal base dollars supporting the program. Each of these programs has the aim to insure that youth and their parents have the tools and the knowledge to make better food choices on a daily basis.

**3. Program existence :**

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

**4. Program duration :**

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :**

- ◉ Yes
- ○ No

**6. Expending other than formula funds or state-matching funds :**

- ◉ Yes
- ○ No

### V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 607 | Consumer Economics | 0% | | 4% | |
| 609 | Economic Theory and Methods | 0% | | 4% | |
| 703 | Nutrition Education and Behavior | 100% | | 47% | |
| 704 | Nutrition and Hunger in the Population | 0% | | 3% | |
| 724 | Healthy Lifestyle | 0% | | 36% | |
| 802 | Human Development and Family Well-Being | 0% | | 3% | |
| 805 | Community Institutions, Health, and Social Services | 0% | | 3% | |
| | **Total** | 100% | | 100% | |

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

Overweight and sedentary lifestyles lead to or exacerbate many chronic diseases including cardiovascular disease, hypertension, diabetes, asthma, cancer, liver disease, and osteoporosis.1 The number of Vermont adults reporting chronic conditions increases with age; in a recent survey, 88 percent of those age 65 and older reported having one or more chronic conditions and 20 percent reported having four or more. One out of four Vermonters is believed to have diabetes or pre-diabetes. Many cases of diabetes remain undiagnosed. Type 2 diabetes is increasing considerably in children and adolescents. Currently 56 percent of Vermont adults are overweight or obese with an increase in the rate of obesity among Vermont adults of 77 percent from 1990 to 2002. The prevalence of obesity among youth is high as well with 24 percent of Vermont students in grades 8 - 12 overweight or at risk of becoming overweight as measured by age and gender specific body mass index. Overweight among young children is increasing at an alarming rate, more than doubling in the last 20 years. Currently 29 percent of low-income children between two and five years of age in Vermont who are part of the Women Infants and Children (WIC) program are overweight or at risk of becoming overweight. By being overweight, children are at risk for chronic conditions at an earlier age.

Lifestyle changes that include more healthful eating (encourage consumption of whole grains, vegetables, and fruits - especially those locally grown; portion control, fewer sweetened beverages), practicing good food safety skills, and increasing physical activity while reducing sedentary time can have a positive influence on reducing and managing chronic conditions to increase their chances for a longer life.

Poverty, hunger, and food insecurity are all factors that contribute to poor health and poor nutrition. Limited resource individuals and families, faced with the loss of jobs, lack of transportation, less affordable housing, and rising fuel and food costs, may be forced to choose the purchase of essentials like heat and electricity over food. Often times it is the quality of food that is sacrificed in an effort to make ends meet, and caretakers often resort to buying calorie rich, nutrient poor foods because they are less expensive. This pattern of eating exacerbates the obesity epidemic, denies children optimal growth, and has an overall negative impact on the physical, emotional, and financial health of our communities.

Hunger and food insecurity are real and growing concerns in Vermont. In 2007, approximately 71,000 Vermonters, 19,000 of which were children, had a gross annual income at or below 100% of the federal poverty level. The same year an additional 109,000 Vermonters had a gross annual income between 100-199% of the federal poverty level. These two subgroups combined represent the approximately 30% of our population who are at risk for hunger and food insecurity and the detrimental health effects associated these conditions. Preliminary data indicates that 61,267 Vermonters (30,194 households) received an average of $200 per month in benefits from the Supplemental Nutrition Assistance Program: 3SquaresVT in November 2008, an increase of 13.9% over the previous year. Even with increasing eligibility and participation, it is estimated that only 68% of eligible Vermonters receive these benefits.

**2. Scope of the Program**

- ☑ In-State Extension
- ☐ In-State Research
- ☐ Multistate Research
- ☑ Multistate Extension
- ☐ Integrated Research and Extension
- ☐ Multistate Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

**1. Assumptions made for the Program**

Preventing or managing chronic diseases can lower health care costs. Most chronic diseases can be prevented through better lifestyle choices. Individuals practicing positive lifestyle changes will feel better about themselves, their families, and their communities and to improve the quality of lives of Vermonters.

**2. Ultimate goal(s) of this Program**

- Improve individual and family health. (Condition)
- Increase production and/or access to safe, nutritious food (Action)
- Individuals will choose healthful eating practices and/or physical activity. (Action)

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 1.3 | 0.0 | 1.6 | 0.0 |
| 2013 | 1.3 | 0.0 | 1.8 | 0.0 |
| 2014 | 1.3 | 0.0 | 1.8 | 0.0 |
| 2015 | 1.3 | 0.0 | 1.8 | 0.0 |
| 2016 | 1.3 | 0.0 | 1.8 | 0.0 |

## V(F). Planned Program (Activity)

### 1. Activity for the Program

Diabetes Education: Workshop series, single session workshops, fact sheets, newsletter

Food, Fun, and Reading/Food, Culture, and Reading Food, Culture, and Reading: a 1-3 hour train-the-trainer session for volunteers/teachers to implement the 6 lesson curriculum for pre-kindergarten through grade 2.

Growing Connections: Growing Connections - supported by base and EFNEP funds, this youth focused program teaches that nutrition, food safety, and food security issues through gardening.

Healthy Eating: - Nutrition classes designed for a wide range of people, with an emphasis on national dietary guidance. Participants learn the latest information about how to choose a healthy diet, practice food safety and to incorporate physical activity into their day. Classes range from one to six sessions, with the topics tailored for the group requesting the program.

### 2. Type(s) of methods to be used to reach direct and indirect contacts

**Extension**

| Direct Methods | Indirect Methods |
|---|---|
| ☐ Education Class | ☐ Public Service Announcement |
| ☑ Workshop | ☐ Billboards |
| ☑ Group Discussion | ☑ Newsletters |
| ☑ One-on-One Intervention | ☑ TV Media Programs |
| ☐ Demonstrations | ☑ Web sites |
| ☑ Other 1 (Research) | ☐ Other 1 |
| ☐ Other 2 | ☐ Other 2 |

### 3. Description of targeted audience

- Adults
- Age 25 - 60 Adult
- Age 46 - 65 Adult
- Communities: Educators
- Communities: Schools
- Extension: Faculty/Staff
- Funders
- Public: Adult Caregivers
- Public: Childcare Workers
- Public: Daycare Providers
- Public: Families with Limited Resources
- Public: Food Stamp Recipients
- Public: General

- Public: Nonprofit Organizations
- Train-the-Trainer recipients:adults
- Age 1 - 5 Pre-School
- Age 6 - 12 School Age

## V(G). Planned Program (Outputs)

### 1. Standard output measures

**Target for the number of persons(contacts) to be reached through direct and indirect contact**

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2012 | 500 | 500 | 30 | 0 |
| 2013 | 500 | 500 | 30 | 0 |
| 2014 | 500 | 500 | 30 | 0 |
| 2015 | 500 | 500 | 30 | 0 |
| 2016 | 500 | 500 | 30 | 0 |

### 2. (Standard Research Target) Number of Patent Applications Submitted

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

### 3. Expected Peer Review Publications

| Year | Research Target | Extension Target | Total |
|---|---|---|---|
| 2012 | 4 | 0 | 4 |
| 2013 | 3 | 1 | 4 |
| 2014 | 4 | 0 | 4 |
| 2015 | 4 | 1 | 5 |
| 2016 | 4 | 0 | 4 |

## V(H). State Defined Outputs

### 1. Output Target

- Conference

  **2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**1

- Consultation

  **2012:**50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

- Consumer Publication

  **2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

- Curriculum

  **2012:**1 **2013:**0 **2014:**0 **2015:**0 **2016:**0

- Fact Sheets

  **2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- Publication - Newprint

  **2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

- Train the trainer program

  **2012:**4 **2013:**4 **2014:**4 **2015:**4 **2016:**4

- Workshop Series

  **2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- Workshop - single session

  **2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

- Webpage (new and updated)

**2012:**2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

### V(I). State Defined Outcome

| O. No | Outcome Name |
|---|---|
| 1 | Number of people who have an increased preference for at least one fruit or vegetable. |
| 2 | Number of youth or adults who self report an increase in mastery of the life skills Healthy Lifestyle Choices and Decision Making. |
| 3 | Number the people that show an improvement in healthful eating practices |

**Outcome #** 1

**1. Outcome Target**

Number of people who have an increased preference for at least one fruit or vegetable.

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**100 **2013:**100 **2014:**100 **2015:**100 **2016:**100

**3. Associated Knowledge Area(s)**

- ☐ 607 - Consumer Economics
- ☐ 609 - Economic Theory and Methods
- ☑ 703 - Nutrition Education and Behavior
- ☐ 704 - Nutrition and Hunger in the Population
- ☐ 724 - Healthy Lifestyle
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 2

**1. Outcome Target**

Number of youth or adults who self report an increase in mastery of the life skills Healthy Lifestyle Choices and Decision Making.

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**200 **2013:**200 **2014:**200 **2015:**200 **2016:**200

**3. Associated Knowledge Area(s)**

- ☐ 607 - Consumer Economics
- ☐ 609 - Economic Theory and Methods

- ☑ 703 - Nutrition Education and Behavior
- ☐ 704 - Nutrition and Hunger in the Population
- ☐ 724 - Healthy Lifestyle
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 3

**1. Outcome Target**

Number the people that show an improvement in healthful eating practices

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

| **2012:**300 | **2013:**300 | **2014:**300 | **2015:**300 | **2016:**300 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

- ☐ 607 - Consumer Economics
- ☐ 609 - Economic Theory and Methods
- ☑ 703 - Nutrition Education and Behavior
- ☑ 704 - Nutrition and Hunger in the Population
- ☐ 724 - Healthy Lifestyle
- ☐ 802 - Human Development and Family Well-Being
- ☐ 805 - Community Institutions, Health, and Social Services

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

## V(J). Planned Program (External Factors)

**1. External Factors which may affect Outcomes**

- ☐ Natural Disasters (drought, weather extremes, etc.)
- ☑ Economy
- ☑ Appropriations changes
- ☑ Public Policy changes
- ☑ Government Regulations
- ☐ Competing Public priorities
- ☑ Competing Programmatic Challenges
- ☐ Populations changes (immigration, new cultural groupings, etc.)
- ☐ Other

**Description**

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- ☑ After Only (post program)
- ☑ Retrospective (post program)
- ☑ Before-After (before and after program)
- ☐ During (during program)
- ☐ Time series (multiple points before and after program)
- ☐ Case Study
- ☐ Comparisons between program participants (individuals, group, organizations) and non-participants
- ☐ Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- ☐ Comparison between locales where the program operates and sites without program intervention
- ☐ Other

**Description**

Participants enrolled in Dining with Diabetes courses since 2001; Menus, Meals & Recipes VIT course participants (2009), and Learning to Live Well with Diabetes VIT course participants (2010) have been asked to participate in an evaluative effort. Winter 2011 evaluation will be summarized and a final report written.

**2. Data Collection Methods**

- ☐ Sampling
- ☑ Whole population

**Survey (Mail, Telephone, On-Site).**

- ☑ Mail

- ☐ Telephone
- ☑ On-Site

**Interview**

- ☐ Structured
- ☑ Unstructured

☐ Case Study
☑ Observation
☐ Portfolio Reviews
☑ Tests
☑ Journals
☐ Other

**Description**

{NO DATA ENTERED}

## V(A). Planned Program (Summary)

**Program # 6**

**1. Name of the Planned Program**

Food Safety

**2. Brief summary about Planned Program**

The incidences of food borne illnesses have continued to increase as our production and availability of food has exploded over the past several decades. There is a keen interest in creating a food system that results in greater food safety through greater application of current knowledge to eliminate microbial contamination and a greater level of education of consumers and other food handling professionals to avoid potential points of contamination. Good agricultural practices (GAP) are a focal area for our programs. The growing demand for and the production of local foods creates both an opportunity and a concern. If food is grown, handled and stored correctly, food borne illnesses will remain low; however, problems that do occur can be quickly identified and corrected. Local producers, handlers and processors must understand and adhere to food safety guidelines. UVM Extension and VT-AES programs are addressing this challenge.

**3. Program existence :**

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

**4. Program duration :**

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :**

- ◉ Yes
- ○ No

**6. Expending other than formula funds or state-matching funds :**

- ◉ Yes
- ○ No

## V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 125 | Agroforestry | 0% | | 5% | |
| 133 | Pollution Prevention and Mitigation | 0% | | 1% | |
| 303 | Genetic Improvement of Animals | 0% | | 3% | |
| 308 | Improved Animal Products (Before Harvest) | 0% | | 1% | |
| 311 | Animal Diseases | 0% | | 15% | |
| 501 | New and Improved Food Processing Technologies | 0% | | 21% | |
| 502 | New and Improved Food Products | 0% | | 1% | |
| 503 | Quality Maintenance in Storing and Marketing Food Products | 0% | | 14% | |
| 511 | New and Improved Non-Food Products and Processes | 0% | | 2% | |
| 701 | Nutrient Composition of Food | 0% | | 4% | |
| 703 | Nutrition Education and Behavior | 0% | | 1% | |
| 711 | Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources | 30% | | 1% | |
| 712 | Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins | 70% | | 10% | |
| 722 | Zoonotic Diseases and Parasites Affecting Humans | 0% | | 2% | |
| 723 | Hazards to Human Health and Safety | 0% | | 2% | |
| 724 | Healthy Lifestyle | 0% | | 13% | |
| 806 | Youth Development | 0% | | 1% | |
| 901 | Program and Project Design, and Statistics | 0% | | 2% | |
| 903 | Communication, Education, and Information Delivery | 0% | | 1% | |
| | **Total** | 100% | | 100% | |

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

**From Making Healthy Lifestyle Choices:**
According to studies conducted by USDA, FDA and the CDC, consumer food safety practices have

improved since 1998. Although the self-reported use of some safe handling practices has increased, many consumers report in surveys and focus groups not following some recommended safe handling practices, such as using a food thermometer, safely handling leftovers, safely defrosting meat and poultry, and immediately discarding food that may be unsafe. Food thermometer use has increased since 1998, but additional improvements are needed. Many consumers do not use a food thermometer.

Small scale food producers and processors often have difficulty understanding and meeting food safety requirements of government regulators and of buyers. Further, many small-scale producers and processors may not understand the need to improve their food safety practices so that they can produce the safest product possible for their consumers.

**2. Scope of the Program**

- ☑ In-State Extension
- ☑ In-State Research
- ☑ Multistate Research
- ☐ Multistate Extension
- ☐ Integrated Research and Extension
- ☑ Multistate Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

**1. Assumptions made for the Program**

**From Making Healthy Lifestyle Choices:**

Food borne illness can compromise an individual's health. Consumers can lower the risk of foodborne illness by practicing food safety skills and safe food preservation practices. Increasingly, foodborne illness outbreaks are being trace to fresh produce. As harmful microorganisms are part of the gardening environment, Home gardens need to follow good agricultural practices to reduce the risk of contamination.

Food producers and processors understand the need for ensuring food safety and are open to working together with relevant stakeholders to improve food safety in Vermont.

Smale scale food producers realize that becoming GAP certified and/or using safe food handling practices will open options for marketing of their products.

**2. Ultimate goal(s) of this Program**

Improve individual and family health. (Condition)

- Increase production and/or access to safe, nutritious food (Action)

Improve agricultural and environmental sustainability (Condition)

- Increase ecomonic sustainability of farms, forests, and other enterprises that contribute to Vermont's working landscape and sustainable coastal development (Action)

**V(E). Planned Program (Inputs)**

**1. Estimated Number of professional FTE/SYs to be budgeted for this Program**

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 1.6 | 0.0 | 4.3 | 0.0 |
| 2013 | 1.6 | 0.0 | 4.3 | 0.0 |
| 2014 | 0.8 | 0.0 | 4.3 | 0.0 |
| 2015 | 0.8 | 0.0 | 4.3 | 0.0 |
| 2016 | 0.8 | 0.0 | 4.3 | 0.0 |

## V(F). Planned Program (Activity)

### 1. Activity for the Program

Research - rapid detection of food-borne pathogens. Rapid determination of molecular identity in trace-back studies.

**Food Safety and Sanitation** - Working with small scale producers on best practices that enable them to provide a safe food product. Good Agricultural Practice (GAP) certification work will occur with producers and collaborative efforts will be used.. This project also encompasses the unplanned requests by individuals/groups for information through phone, e-mail or in-person on general food safety questions. Efforts with small local processors will be growing in the coming years of this plan.

### 2. Type(s) of methods to be used to reach direct and indirect contacts

**Extension**

| Direct Methods | Indirect Methods |
|---|---|
| ☐ Education Class | ☐ Public Service Announcement |
| ☑ Workshop | ☐ Billboards |
| ☐ Group Discussion | ☑ Newsletters |
| ☑ One-on-One Intervention | ☑ TV Media Programs |
| ☑ Demonstrations | ☐ Web sites |
| ☑ Other 1 (lab-based research) | ☐ Other 1 |
| ☐ Other 2 | ☐ Other 2 |

### 3. Description of targeted audience

- Adults

- Public: General
- Youth

- Small scale meat and produce farmers

## V(G). Planned Program (Outputs)

### 1. Standard output measures

**Target for the number of persons(contacts) to be reached through direct and indirect contact**

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2012 | 200 | 0 | 50 | 0 |
| 2013 | 200 | 0 | 50 | 0 |
| 2014 | 200 | 0 | 50 | 0 |
| 2015 | 200 | 0 | 50 | 0 |
| 2016 | 200 | 0 | 50 | 0 |

### 2. (Standard Research Target) Number of Patent Applications Submitted

**2012:**0 **2013:**0 **2014:**0 **2015:**0 **2016:**0

### 3. Expected Peer Review Publications

| Year | Research Target | Extension Target | Total |
|---|---|---|---|
| 2012 | 2 | 0 | 2 |
| 2013 | 2 | 0 | 2 |
| 2014 | 2 | 0 | 2 |
| 2015 | 2 | 0 | 2 |
| 2016 | 2 | 0 | 2 |

## V(H). State Defined Outputs

### 1. Output Target

- Consultations

**2012:**50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

- Field day/Fair

**2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

- Newsprint Article

**2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

- Workshop Series

**2012:**2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

- Workshop - single session

**2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

## V(I). State Defined Outcome

| O. No | Outcome Name |
|---|---|
| 1 | Increase and maintain collaboration on events with agency and industry personnel to address safety (farm, food, etc.) and emergency preparedness |
| 2 | Increase in number of fair, field days or event attendees who demonstrate an increased understanding of the health risks associated with the failure to wash hands |
| 3 | Number of people who show improvement in food safety and preservation practices |
| 4 | Number of farms that pass the USDA GAP audit |

**Outcome #** 1

**1. Outcome Target**

Increase and maintain collaboration on events with agency and industry personnel to address safety (farm, food, etc.) and emergency preparedness

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**20 **2013:**20 **2014:**5 **2015:**5 **2016:**5

**3. Associated Knowledge Area(s)**

- ☐ 125 - Agroforestry
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 303 - Genetic Improvement of Animals
- ☐ 308 - Improved Animal Products (Before Harvest)
- ☐ 311 - Animal Diseases
- ☐ 501 - New and Improved Food Processing Technologies
- ☐ 502 - New and Improved Food Products
- ☐ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 701 - Nutrient Composition of Food
- ☐ 703 - Nutrition Education and Behavior
- ☐ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☐ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☐ 722 - Zoonotic Diseases and Parasites Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety
- ☐ 724 - Healthy Lifestyle
- ☐ 806 - Youth Development
- ☐ 901 - Program and Project Design, and Statistics
- ☑ 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 2

**1. Outcome Target**

Increase in number of fair, field days or event attendees who demonstrate an increased understanding of the health risks associated with the failure to wash hands

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**500 **2013:**500 **2014:**500 **2015:**500 **2016:**500

**3. Associated Knowledge Area(s)**

- ☐ 125 - Agroforestry
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 303 - Genetic Improvement of Animals
- ☐ 308 - Improved Animal Products (Before Harvest)
- ☐ 311 - Animal Diseases
- ☐ 501 - New and Improved Food Processing Technologies
- ☐ 502 - New and Improved Food Products
- ☐ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 701 - Nutrient Composition of Food
- ☐ 703 - Nutrition Education and Behavior
- ☐ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☐ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☐ 722 - Zoonotic Diseases and Parasites Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety
- ☐ 724 - Healthy Lifestyle
- ☐ 806 - Youth Development
- ☐ 901 - Program and Project Design, and Statistics
- ☐ 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 3

**1. Outcome Target**

Number of people who show improvement in food safety and preservation practices

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**100 **2013:**100 **2014:**100 **2015:**100 **2016:**0

**3. Associated Knowledge Area(s)**

- ☐ 125 - Agroforestry
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 303 - Genetic Improvement of Animals
- ☐ 308 - Improved Animal Products (Before Harvest)
- ☐ 311 - Animal Diseases
- ☐ 501 - New and Improved Food Processing Technologies
- ☐ 502 - New and Improved Food Products
- ☐ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 701 - Nutrient Composition of Food
- ☑ 703 - Nutrition Education and Behavior
- ☐ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☐ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☐ 722 - Zoonotic Diseases and Parasites Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety
- ☐ 724 - Healthy Lifestyle
- ☐ 806 - Youth Development
- ☐ 901 - Program and Project Design, and Statistics
- ☐ 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 4

**1. Outcome Target**

Number of farms that pass the USDA GAP audit

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**10 **2013:**10 **2014:**0 **2015:**0 **2016:**0

**3. Associated Knowledge Area(s)**

- ☐ 125 - Agroforestry
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 303 - Genetic Improvement of Animals
- ☐ 308 - Improved Animal Products (Before Harvest)
- ☐ 311 - Animal Diseases
- ☐ 501 - New and Improved Food Processing Technologies
- ☐ 502 - New and Improved Food Products
- ☑ 503 - Quality Maintenance in Storing and Marketing Food Products
- ☐ 511 - New and Improved Non-Food Products and Processes
- ☐ 701 - Nutrient Composition of Food
- ☐ 703 - Nutrition Education and Behavior
- ☑ 711 - Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and
- ☑ 712 - Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally
- ☐ 722 - Zoonotic Diseases and Parasites Affecting Humans
- ☑ 723 - Hazards to Human Health and Safety
- ☐ 724 - Healthy Lifestyle
- ☐ 806 - Youth Development
- ☐ 901 - Program and Project Design, and Statistics
- ☐ 903 - Communication, Education, and Information Delivery

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

## V(J). Planned Program (External Factors)

**1. External Factors which may affect Outcomes**

- ☐ Natural Disasters (drought, weather extremes, etc.)
- ☑ Economy
- ☑ Appropriations changes
- ☑ Public Policy changes
- ☑ Government Regulations
- ☐ Competing Public priorities
- ☐ Competing Programmatic Challenges
- ☐ Populations changes (immigration, new cultural groupings, etc.)
- ☑ Other (Food safety requirements of food)

**Description**

**V(K). Planned Program (Evaluation Studies and Data Collection)**

**1. Evaluation Studies Planned**

- ☑ After Only (post program)
- ☑ Retrospective (post program)
- ☑ Before-After (before and after program)
- ☐ During (during program)
- ☐ Time series (multiple points before and after program)
- ☐ Case Study
- ☐ Comparisons between program participants (individuals, group, organizations) and non-participants
- ☐ Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- ☐ Comparison between locales where the program operates and sites without program intervention
- ☐ Other

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- ☑ Sampling
- ☑ Whole population

**Survey (Mail, Telephone, On-Site).**

- ☑ Mail
- ☐ Telephone
- ☑ On-Site

**Interview**

- ☐ Structured
- ☐ Unstructured

☐ Case Study
☑ Observation
☐ Portfolio Reviews
☑ Tests
☐ Journals
☐ Other

**Description**

{NO DATA ENTERED}

## V(A). Planned Program (Summary)

**Program # 7**

**1. Name of the Planned Program**

Urban Non Point Source Pollution

**2. Brief summary about Planned Program**

The Lake Champlain Basin is a critical part of the tourism industry in Vermont and Lake Champlain is a source of drinking water for thousands of households. Efforts to reduce non-point source pollution are critical to the maintenance of our water supply for human consumption and economic development for the area. The goals of outreach, education and research are to improve understanding, use and management of our urban centers to protect the waters within the Lake Champlain basin. VT-AES and the UVM Extension programs work with residents, municipal governments, businesses, institutional landlords, schools and neighborhoods to reduce runoff from urban landscapes to protect urban streams emptying into Lake Champlain.

VT-AES research efforts center on:
Assessment and reduction of phosphorus in agricultural drainage;
Constructed wetlands center at the University of Vermont;
Reducing Vermont dairy farm point and non-point pollution sources;
Agricultural effluent management.

**3. Program existence :**

- ○ New (One year or less)
- ○ Intermediate (One to five years)
- ◉ Mature (More than five years)

**4. Program duration :**

- ○ Short-Term(One year or less)
- ○ Medium-Term (One to five years)
- ◉ Long-Term (More than five years)

**5. Expending formula funds or state-matching funds :**

- ◉ Yes
- ○ No

**6. Expending other than formula funds or state-matching funds :**

- ◉ Yes
- ○ No

### V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

| KA Code | Knowledge Area | %1862 Extension | %1890 Extension | %1862 Research | %1890 Research |
|---|---|---|---|---|---|
| 102 | Soil, Plant, Water, Nutrient Relationships | 25% | | 10% | |
| 111 | Conservation and Efficient Use of Water | 0% | | 8% | |
| 112 | Watershed Protection and Management | 75% | | 22% | |
| 133 | Pollution Prevention and Mitigation | 0% | | 23% | |
| 402 | Engineering Systems and Equipment | 0% | | 8% | |
| 403 | Waste Disposal, Recycling, and Reuse | 0% | | 21% | |
| 405 | Drainage and Irrigation Systems and Facilities | 0% | | 8% | |
| | **Total** | 100% | | 100% | |

## V(C). Planned Program (Situation and Scope)

### 1. Situation and priorities

**From Insufficient community and youth education, technical assistance and information are constraints to the prevention of polluted runoff especially in developed and developing areas:**

UVM Extension and VT-AES provide research based educational programs and practical information concerning Vermont's natural environment. A key value to UVM Extension and VT-AES is dedication to the stewardship of Vermont's natural resources and natural environment. UVM Extension provides timely, credible information to Vermonters for decision making, problem solving, community engagement, and public policy development. Working with our partners, UVM Extension faculty and staff provide leadership to help solve problems and ensure the economic sustainability and ecological integrity of Vermont's valuable natural resources. Sources: University of Vermont Extension in the 21st Century

Knowledge about the condition of our environment including water resources is constantly changing, as are the landscapes in which we live. One result of this trend is the variability of relevant water resource education in Vermont that can create informed citizens prepared to make decisions that benefit watersheds and water quality. Moreover, many science educators do not have the current knowledge, resources or support to integrate appropriate watershed education into their curricula.

The University of Vermont Watershed Alliance (WA) supports environmental education by making hands-on, up-to-date, inquiry-based, scientific watershed and water quality education available to Vermonters including educators, students, and the general public. UVM WA provides equipment, curricula, technical support and human resources for those participating in our programs.

Storm water and NPS pollution. - While advances have been made in methods of treating stormwater pollution, it still remains the fastest growing threat to Vermont's water quality. Intensive land development, urbanization and intensification of agriculture produce stormwater runoff that degrades many Vermont streams and watersheds. Rain and snowmelt from rooftops, parking lots, streets, and driveways, picks up sediment, phosphorous, toxins, pathogens, oil, grease, and other pollutants that can impair surface waters. There are 15 lakes and ponds and 98 state stream and river waters that do not meet

Vermont Water Quality Standards (the 2008 303 (d) list) . NPS related sources of impairment are storm water, land development and urban runoff related (13), urban/septic associated e. coli (20), and sediment or erosion( 24). All of the waterways in heavily developed Chittenden County in northwestern Vermont are impaired by stormwater runoff.

A 2007 report estimated that 46% of the nonpoint source phosphorus load to Lake Champlain is from urban land uses, even though urban/suburban developed areas account for only 3% of the basin area. Urban NPS pollutants originate from decisions by individuals on how they manage their property, be it residential, commercial or municipal property. Only when large numbers of residents, property managers, lawn care firms, municipal governments and others act together to reduce lawn inputs and storm water runoff on their property will we achieve success in control and reduction of urban NPS pollution. Generating the will to change practices within an impaired watershed depends on building an aware and engaged community through education, outreach and technology transfer.

At the suburban-rural transition, stormwater runoff from development and from agricultural or forestry operations combine to impair streams and surface waters. Improperly managed, runoff from agriculture and forestry generates pollutants (e.g. nutrients, manure, agrichemicals) and sediments, and contributes to erosion and stream channel instability.

Erosion and sedimentation are underlying sources of significant water quality problems in Vermont, related to both agricultural runoff and urban stormwater. Eroded soils carry significant amounts of phosphorous to receiving streams and lakes. Phosphorous is the most serious problem facing Vermont's lakes and ponds by accelerating eutrophication and by stimulating algal blooms that are sometimes dominated by toxin producing species. Sediment and erosion are the primary or secondary causes of impairment in 24 of 113 state waters on the 2008 303 (d) list. Shoreline property owners inadvertently promote shoreline erosion, sedimentation and phosphorous input by clearing natural vegetation and modifying stream banks or shoreline for views or recreation. The resulting is increases in storm water runoff volume, and velocity leads into shoreline erosion and sediment impairment of receiving waters. As erosion occurs, landowners often use engineered approaches to slow or stop erosion. While these methods are necessary in certain situations, most shoreline erosion problems can be corrected using non-structural (bioengineering) techniques by controlling storm water flows and maintaining vegetated and stable shorelines can prevent or reduce erosion can help decrease sediment and phosphorous input into waterways.

Lake Champlain Sea Grant outreach, education, and research support the improved understanding, use and management of Lake Champlain, basin watersheds and inland lakes. Lake Champlain Sea Grant addresses UVM Extension's priority issue of sustainable water resources education and management and supports national CSREES goals of cleaner water and enhanced stewardship and management of natural resources. Lake Champlain Sea Grant activities contribute to improved water quality in Vermont waterways and local communities by reducing non-point source pollution through education, public awareness and community action involving residents, municipal governments, and business and institutional landowners in impaired watersheds.

Vermont Natural Resources Council, http://www.vnrc.org/article/articleview/5641/1/653/ , accessed 2/2/09

State of Vermont 303(d) list of waters. Part A - impaired surface waters in need of TMDL. October 2008

Stormwater and water quality in Chittenden County, Chittenden Co. Regional Planning Commission, March 2002

Troy A., D. Wang and D. Capen. 2007. Updating the Lake Champlain Basin Land Use Data to Improve Prediction of Phosphorus Loading. LCBP Technical Report #54. 121p.

**2. Scope of the Program**

- ☑ In-State Extension
- ☑ In-State Research
- ☑ Multistate Research
- ☑ Multistate Extension
- ☐ Integrated Research and Extension
- ☐ Multistate Integrated Research and Extension

## V(D). Planned Program (Assumptions and Goals)

### 1. Assumptions made for the Program

The Public continues to place Water Quality high on the list of priority issues.
Federal and state regulations are developed and implemented to protect water resources.

### 2. Ultimate goal(s) of this Program

Improve agricultural and environmental sustainability *(Condition)*

- Decrease impacts of development, including stormwater runoff and non-point source pollution, on our water resources to improve aquatic ecosystems and water quality *(Action)*

- *Improve capacity of Lake Champlain communities to prepare for and respond to hazardous coastal or watershed events, including those associated with predicted climate change. (Action)*
- Vulnerable communities are prepared for and act to prevent erosion and shoreline destabilization (Action)

## V(E). Planned Program (Inputs)

### 1. Estimated Number of professional FTE/SYs to be budgeted for this Program

| Year | Extension | | Research | |
|---|---|---|---|---|
| | 1862 | 1890 | 1862 | 1890 |
| 2012 | 3.0 | 0.0 | 0.4 | 0.0 |
| 2013 | 3.0 | 0.0 | 0.4 | 0.0 |
| 2014 | 3.0 | 0.0 | 0.4 | 0.0 |
| 2015 | 3.0 | 0.0 | 0.4 | 0.0 |
| 2016 | 3.0 | 0.0 | 0.4 | 0.0 |

## V(F). Planned Program (Activity)

### 1. Activity for the Program

- **Urban Watershed and Water Quality**: work with towns, municipalities, community organizations with consultations, demonstrations, workshops, newsprint, presentation, youth camps
- **Watershed & Water Quality Programs**:Watershed education for educators and students, and community members with consultation, train the trainer, demonstration, field site visits

- **Design, testing and implementation** of materials and technologies for the removal of phosphorus from agricultural run-off and suburban wastewater non-point sources

**2. Type(s) of methods to be used to reach direct and indirect contacts**

**Extension**

| Direct Methods | Indirect Methods |
|---|---|
| ☐ Education Class | ☐ Public Service Announcement |
| ☑ Workshop | ☐ Billboards |
| ☑ Group Discussion | ☑ Newsletters |
| ☑ One-on-One Intervention | ☑ TV Media Programs |
| ☑ Demonstrations | ☑ Web sites |
| ☑ Other 1 (train the trainer) | ☑ Other 1 (technical puplications) |
| ☑ Other 2 (Presentations) | ☑ Other 2 (field day/fair) |

**3. Description of targeted audience**

- Adults
- Age 19 - 24 Young Adult
- Age 25 - 60 Adult
- Agriculture/Natural Resources: Watershed Based Organizations
- Agriculture: Service Providers
- Communities: Cities and Towns
- Communities: Educators
- Communities: Local Officials/Leaders
- Communities: Schools
- Community leaders and citizens
- Environmental Professionals: Environmental Managers
- Public: College Students
- Public: Families
- Public: General
- Public: Homeowners
- Public: Master Gardeners
- Public: Small Business Owners/Entreprenuers
- Age 13 - 18 Youth
- Age 8 - 18 Youth
- Public: Age 13-18 (Youth)
- Train-the-Trainer recipients:youth
- Youth

## V(G). Planned Program (Outputs)

**1. Standard output measures**

**Target for the number of persons(contacts) to be reached through direct and indirect contact**

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |

| | Direct Contact Adults | Indirect Contacts Adults | Direct Contacts Youth | Indirect Contacts Youth |
|---|---|---|---|---|
| Year | Target | Target | Target | Target |
| 2012 | 350 | 1200 | 1400 | 0 |
| 2013 | 350 | 1200 | 1400 | 0 |
| 2014 | 350 | 1200 | 1400 | 0 |
| 2015 | 350 | 1200 | 1400 | 0 |
| 2016 | 350 | 1200 | 1400 | 0 |

**2. (Standard Research Target) Number of Patent Applications Submitted**

**2012:**0 **2013:**1 **2014:**0 **2015:**0 **2016:**0

**3. Expected Peer Review Publications**

| Year | Research Target | Extension Target | Total |
|---|---|---|---|
| 2012 | 3 | 2 | 5 |
| 2013 | 4 | 2 | 6 |
| 2014 | 4 | 2 | 6 |
| 2015 | 0 | 2 | 2 |
| 2016 | 0 | 2 | 2 |

## V(H). State Defined Outputs

### 1. Output Target

- Consultation

  **2012:**15 **2013:**15 **2014:**15 **2015:**15 **2016:**15

- Demonstration

  **2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

- Field day/Fair

  **2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**1

- Presentation

  **2012:**25 **2013:**25 **2014:**25 **2015:**25 **2016:**25

- Fact Sheet

  **2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

- Tour

  **2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**1

- Train the Trainer

  **2012:**4 **2013:**4 **2014:**4 **2015:**4 **2016:**4

- Web page updating

  **2012:**1 **2013:**1 **2014:**1 **2015:**1 **2016:**1

- Workshop series

  **2012:**5 **2013:**5 **2014:**5 **2015:**5 **2016:**5

- Workshop - single session

**2012:**20 **2013:**20 **2014:**20 **2015:**20 **2016:**20

### V(I). State Defined Outcome

| O. No | Outcome Name |
|---|---|
| 1 | Number of educators increasing knowledge of watersheds and new teaching tools and techniques |
| 2 | Number of lakeshore residential properties planting buffer strips or maintaining native vegetation as a buffer to decrease erosion and sedimentation |
| 3 | Number of middle and high school youth demonstrating an increase in knowledge of watersheds and their role as watershed stewards |
| 4 | Number of municipal officials have an increased understanding of and need for natural resource based planning and stormwater management at the municipal level |
| 5 | Number of municipalities integrating natural resource protection and Low Impact Development strategies in town plans and ordinances |
| 6 | Number of properties under one or more low input/ no phosphorous lawn care practices |
| 7 | Number of participant hours restoring riparian habitat through stewardship activities. |
| 8 | Number of residencial households adopting low input/no phosphorous lawn care practices |
| 9 | Number of retail lawn and garden centers providing information on low input/no phosphorous lawn care options to customers |
| 10 | Number of schools that demonstrate an increase in, or institutionalization of, integrated watershed education into returning educators  curriculum |
| 11 | Number of service learning high school or undergraduate college students conducting or participating in watershed stewardship projects |
| 12 | Number of sites where Low Impact Development practices are being used to decrease stormwater runoff |
| 13 | Number of towns/municipalities and watershed organizations conducting outreach activities and participating in outcome oriented water quality education |

**Outcome #** 1

**1. Outcome Target**

Number of educators increasing knowledge of watersheds and new teaching tools and techniques

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 2

**1. Outcome Target**

Number of lakeshore residential properties planting buffer strips or maintaining native vegetation as a buffer to decrease erosion and sedimentation

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**15 **2013:**15 **2014:**15 **2015:**15 **2016:**15

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water

- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 3

**1. Outcome Target**

Number of middle and high school youth demonstrating an increase in knowledge of watersheds and their role as watershed stewards

**2. Outcome Type :**

- ◉ Change in Knowledge Outcome Measure
- ◯ Change in Action Outcome Measure
- ◯ Change in Condition Outcome Measure

**2012:**900 **2013:**900 **2014:**900 **2015:**900 **2016:**900

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 4

**1. Outcome Target**

Number of municipal officials have an increased understanding of and need for natural resource based planning and stormwater management at the municipal level

**2. Outcome Type :**

- (●) Change in Knowledge Outcome Measure
- ( ) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**3 **2013:**3 **2014:**3 **2015:**3 **2016:**3

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 5

**1. Outcome Target**

Number of municipalities integrating natural resource protection and Low Impact Development strategies in town plans and ordinances

**2. Outcome Type :**

- ( ) Change in Knowledge Outcome Measure
- (●) Change in Action Outcome Measure
- ( ) Change in Condition Outcome Measure

**2012:**2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse

☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

☑ 1862 Extension
☐ 1862 Research

**Outcome #** 6

**1. Outcome Target**

Number of properties under one or more low input/ no phosphorous lawn care practices

**2. Outcome Type :**

○ Change in Knowledge Outcome Measure
◉ Change in Action Outcome Measure
○ Change in Condition Outcome Measure

**2012:**20 **2013:**20 **2014:**20 **2015:**20 **2016:**20

**3. Associated Knowledge Area(s)**

☐ 102 - Soil, Plant, Water, Nutrient Relationships
☐ 111 - Conservation and Efficient Use of Water
☑ 112 - Watershed Protection and Management
☐ 133 - Pollution Prevention and Mitigation
☐ 402 - Engineering Systems and Equipment
☐ 403 - Waste Disposal, Recycling, and Reuse
☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

☑ 1862 Extension
☐ 1862 Research

**Outcome #** 7

**1. Outcome Target**

Number of participant hours restoring riparian habitat through stewardship activities.

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**250 **2013:**250 **2014:**250 **2015:**250 **2016:**250

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 8

**1. Outcome Target**

Number of residencial households adopting low input/no phosphorous lawn care practices

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**20 **2013:**20 **2014:**20 **2015:**20 **2016:**20

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse

☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

☑ 1862 Extension
☐ 1862 Research

**Outcome #** 9

**1. Outcome Target**

Number of retail lawn and garden centers providing information on low input/no phosphorous lawn care options to customers

**2. Outcome Type :**

◉ Change in Knowledge Outcome Measure
◯ Change in Action Outcome Measure
◯ Change in Condition Outcome Measure

**2012:**50 **2013:**50 **2014:**50 **2015:**50 **2016:**50

**3. Associated Knowledge Area(s)**

☐ 102 - Soil, Plant, Water, Nutrient Relationships
☐ 111 - Conservation and Efficient Use of Water
☑ 112 - Watershed Protection and Management
☐ 133 - Pollution Prevention and Mitigation
☐ 402 - Engineering Systems and Equipment
☐ 403 - Waste Disposal, Recycling, and Reuse
☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

☑ 1862 Extension
☐ 1862 Research

**Outcome #** 10

**1. Outcome Target**

Number of schools that demonstrate an increase in, or institutionalization of, integrated watershed education into returning educators curriculum

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**15 **2013:**15 **2014:**15 **2015:**15 **2016:**15

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

**Outcome #** 11

**1. Outcome Target**

Number of service learning high school or undergraduate college students conducting or participating in watershed stewardship projects

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**2 **2013:**2 **2014:**2 **2015:**2 **2016:**2

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse

☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

☑ 1862 Extension
☐ 1862 Research

**Outcome #** 12

**1. Outcome Target**

Number of sites where Low Impact Development practices are being used to decrease stormwater runoff

**2. Outcome Type :**

○ Change in Knowledge Outcome Measure
◉ Change in Action Outcome Measure
○ Change in Condition Outcome Measure

| **2012:**10 | **2013:**10 | **2014:**10 | **2015:**10 | **2016:**10 |
|---|---|---|---|---|

**3. Associated Knowledge Area(s)**

☐ 102 - Soil, Plant, Water, Nutrient Relationships
☐ 111 - Conservation and Efficient Use of Water
☑ 112 - Watershed Protection and Management
☐ 133 - Pollution Prevention and Mitigation
☐ 402 - Engineering Systems and Equipment
☐ 403 - Waste Disposal, Recycling, and Reuse
☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

☑ 1862 Extension
☐ 1862 Research

**Outcome #** 13

**1. Outcome Target**

Number of towns/municipalities and watershed organizations conducting outreach activities and participating in outcome oriented water quality education

**2. Outcome Type :**

- ○ Change in Knowledge Outcome Measure
- ◉ Change in Action Outcome Measure
- ○ Change in Condition Outcome Measure

**2012:**10 **2013:**10 **2014:**10 **2015:**10 **2016:**10

**3. Associated Knowledge Area(s)**

- ☐ 102 - Soil, Plant, Water, Nutrient Relationships
- ☐ 111 - Conservation and Efficient Use of Water
- ☑ 112 - Watershed Protection and Management
- ☐ 133 - Pollution Prevention and Mitigation
- ☐ 402 - Engineering Systems and Equipment
- ☐ 403 - Waste Disposal, Recycling, and Reuse
- ☐ 405 - Drainage and Irrigation Systems and Facilities

**4. Associated Institute Type(s)**

- ☑ 1862 Extension
- ☐ 1862 Research

## V(J). Planned Program (External Factors)

**1. External Factors which may affect Outcomes**

- ☑ Natural Disasters (drought, weather extremes, etc.)
- ☑ Economy
- ☑ Appropriations changes
- ☑ Public Policy changes
- ☑ Government Regulations
- ☑ Competing Public priorities
- ☑ Competing Programmatic Challenges
- ☐ Populations changes (immigration, new cultural groupings, etc.)
- ☑ Other (techology limitations in areas)

**Description**

## V(K). Planned Program (Evaluation Studies and Data Collection)

**1. Evaluation Studies Planned**

- ☐ After Only (post program)
- ☑ Retrospective (post program)
- ☑ Before-After (before and after program)
- ☑ During (during program)
- ☐ Time series (multiple points before and after program)
- ☐ Case Study
- ☐ Comparisons between program participants (individuals, group, organizations) and non-participants
- ☐ Comparisons between different groups of individuals or program participants experiencing different levels of program intensity.
- ☑ Comparison between locales where the program operates and sites without program intervention
- ☐ Other

**Description**

{NO DATA ENTERED}

**2. Data Collection Methods**

- ☑ Sampling
- ☑ Whole population

**Survey (Mail, Telephone, On-Site).**

- ☑ Mail
- ☐ Telephone
- ☑ On-Site

**Interview**

- ☐ Structured
- ☐ Unstructured

- ☐ Case Study
- ☑ Observation
- ☐ Portfolio Reviews
- ☑ Tests
- ☐ Journals
- ☐ Other

**Description**

{NO DATA ENTERED}