

# 2007 NY State Agricultural Experiment Station Research and Cornell University Research and Extension Combined Plan of Work

## Brief Summary about Plan of Work

Cornell University FY07-11 Plan of Work for Agricultural Research and Extension Formula Funds  
Cornell University Agricultural Experiment Station  
NYS Agricultural Experiment Station  
Cornell Cooperative Extension  
College of Agriculture and Life Sciences  
College of Human Ecology  
College of Veterinary Medicine

This plan is structured around five broad initiatives: Agriculture and Food Systems Sustainability, Community Economic Vitality, Improved Quality of Life for Individuals and Families, Natural Resources and Environment, and Youth Development.

### Agriculture and Food System Sustainability

#### Agricultural and Horticultural Business Vitality (Plan 1.1)

Agriculture, horticulture, and related business vitality work is critical to the land grant mission. Cornell University has a commitment to the farm and agricultural/horticultural business industries of New York State and to assist key decision makers in making the best choices in managing their farms or agriculturally related businesses. Research and educational programs help business owners improve productivity and sustainability through resource management, adoption of new technologies and practices, improved marketing strategies and business management skills and by looking to alternative enterprises. Farmers and horticulturalists utilize research based knowledge to continue producing a stable, safe and affordable food supply and horticultural products in economically and environmentally sustainable ways.

Agricultural and food industries contribute an estimated \$30 billion a year to New York State's economy. Non-food horticultural businesses contribute a significant amount in addition to the numbers listed. The absolute size of New York State's agriculture, as measured by real sales of agricultural products, has increased modestly over the last 20 years. Declines in meat livestock have been offset by small increases in the dairy industry resulting in relatively constant livestock sales. However, increases in vegetables, oil seed and horticulture crop sales have raised the total level of crop production.

The total number of people employed in agriculture has been relatively stable with some modest increases in recent years. Structural change has resulted in increased numbers of agricultural service jobs as specialized service firms now conduct a number of the functions that used to be done by the farmers themselves. 37,000 farms use almost 25% of the State's land area or 7.6 million acres. The land and farm buildings owned by New York farmers are valued at over \$12 billion. Nearly 2,600 horticultural businesses used over 25,800 acres, plus more than 31 million square feet of greenhouse space.

Although there is every reason to believe that the dairy industry, the largest agricultural enterprise, will remain competitive and continue as the dominant industry in New York State, the vegetable and ornamental horticulture industries are expanding, with the horticulture industry showing nearly 50 percent growth since 1985. Nearness to the east coast urban areas provides demand for fresh quality fruits and vegetables and a wide variety of ornamental horticulture products. The structural change taking place in much of New York agriculture, combined with expansion in the vegetable and horticulture businesses, results in a vibrant industry with the potential for a strong future. However, to remain competitive that industry needs highly qualified new employees and research and outreach support on the continuing and emerging issues that rapid change engenders.

#### Viable and Sustainable Production Practices (shared with Natural Resources and Environment)

For the purposes of this document only we have split this into two plans: Plan 1.2 Animal Production and Plan 1.3 for Plant Production)

Improving production efficiency, quality and safety of plants and animals in agricultural, horticultural, and natural resource production systems is fundamental to improving our ability to compete in a global economy. Managers of New York's more than 40,000 farms and natural resource enterprises face dynamic and complex production environments. Extensive knowledge and skill is needed for identifying, selecting, and adopting principles and practices that optimize production management and improve profitability and sustainability in accordance with business goals. Technologies such as genetic engineering, satellite imagery and GIS, computer aided management decision tools and the like were in exploratory phases a decade or less ago but are readily available today for adoption and use. Technical assistance providers have similar needs to remain up-to-date and able to provide appropriate recommendations for each enterprise.

Production improvements can be accomplished through: 1) incorporating established and new practices and technologies; 2) traditional and modern genetics which select for desired traits (such as yield, flavor and pest resistance) and an understanding of how they can be expressed under different environmental regimes; 3) improving our understanding of the nutritional

requirements for plants and animals so that inputs and waste products are minimized; 4) improving our understanding of soils and soil management techniques in order to maintain or improve the health of the soil and reduce losses to the environment; 5) improving our understanding of the impact of environmental conditions on plant and animal production.

Protecting and improving the integrity of our environment and maintaining ecological systems enables human prosperity. Expanding human populations cause growing consumer demands on the agriculture and food system. This magnifies the challenges of balancing food production and processing with land stewardship and protection of the environment. The long-term sustainability of agriculture is inexorably linked to environmental quality.

Specific emphasis is placed on: assessing existing and new production-management practices and techniques; improved product handling and storage to maintain quality and safety; crop choices for sustainability and profitability, and improving production efficiency through adoption of best management practices. We place special emphasis on agricultural environmental management including topics such as: potential environmental impacts of practices; requirements and opportunities of environmental regulations and programs; whole farm systems including integrated nutrient management, integrated pest management and environmental protection; waste management and recycling methods for sustainable agricultural production and environmental protection; water conservation and protection measures; and soil health management and protection. New regulations and guidelines, including the Confined Animal Feeding Operations regulations, have created opportunities for more multi-disciplinary research, for example, precision animal feeding as an aspect of nutrient management on farms and nutrient management as an aspect of watershed management.

#### Renewable/Alternative Energy and Conservation (Plan 1.4) (shared with Natural Resources and Environment)

With some of the highest energy costs in the nation, New York residents, businesses, and organizations need current information on energy supply alternatives and practical energy conservation and cost-saving measures to maintain financial security and vitality. Producers and community leaders need information on new or renewed energy production alternatives and policies and management alternatives that promote energy conservation to make informed investment and policy decisions.

The Renewable/Alternative Energy and Conservation Program is a multi-emphasis, multi-audience effort addressing agricultural and natural resource producers, community decision makers, and individual consumers. The program addresses USDA priorities related to renewable energy investments in rural areas, its bioenergy programs that encourage increased purchases of eligible commodities for the purpose of expanding production and supporting new production capacity for bioenergy (focused on ethanol and biodiesel), and energy efficiency/conservation initiatives to reduce costs to producers and environmental costs of agricultural/natural resource production. The program also addresses additional energy alternatives such as wood and grass pellet fuel production, recycling of vegetable oils as biodiesel, wind and solar energy production. Lower-income homeowners and renters are particularly hard hit by escalating energy costs and need appropriate alternatives for conserving energy and reducing costs, particularly for housing and transportation. A wide array of energy subsidies and conservation incentives are available to individuals and community organizations, but they are fractionated and unevenly available leading to confusion and inequitable treatment. Community agencies/organizations and local governments need to understand how their policies and practices influence energy use and adopt strategies to promote energy conservation.

#### The Agriculture/Community Interface (Plan 1.5)

New York is a diverse state with a complex mix of metropolitan, suburban and rural areas. Even in the most rural areas, changing populations and land use patterns often bring agriculture/horticulture/ natural resource enterprises in contact with neighbors or visitors who do not understand or appreciate the nature of their operations and contributions to the community. Local municipal leaders must balance private property rights, community growth, quality of life issues and environmental protection. Often, the land that is most desirable and economical for food production is also the land that is most attractive for development. From the agricultural production perspective, a critical mass of farmland and the right to engage in accepted agricultural practices is imperative to maintain a viable local farm economy. The flexibility to adapt based on the location and evolution of the farm business to meet the needs of today's society is essential to retain or allow for the expansion of existing farm, horticulture, natural resource, and food industry businesses. Many local residents are two to four generations removed from the farm. In some cases, when they move into more rural areas, issues arise over noise, odors, dust, and slow moving farm vehicles. In other situations, long time residents become engaged in conflicts with their farm neighbors as the farm business changes to remain competitive in a global market or attempts to attract local customers through the production and marketing of a niche product. (Adapted from Harrison, R. 2002. Municipal Reference For Agricultural Land Use Planning, Cornell Cooperative Extension.)

#### Priority Emphases

Sustainable Agricultural Systems that Minimize Environmental Impact and Maintain Dynamic Farm Profitability  
Managing Human Resources Especially Related to Identifying, Hiring, and Retaining New Workers and the Education of Middle Management and Owners

Identifying Value Added Products and Associated Market Channels

Agriculture and Food Systems Responsiveness to Human Health Needs

#### Community Economic Vitality

Connecting People to the Land and Their Environment (Plan 2.1) (shared with Natural Resources and Environment)

CCE, CUAES, and NYSAES have a commitment to the people of New York to build self-capacity among citizens for solving problems, improving the quality of life, and building strong and vibrant communities. We work to promote active and representative participation of community members to shape their collective future.

Through integrated research and extension agendas, we can help develop effective and collaborative land use/environment/natural resource management approaches and policies that enhance economic, environmental and social connections. This program operates from three basic premises: New York State has a diverse and dynamic landscape; land use policies are among the most important concerns affecting New York State; and, there is a growing interest in communities' relationships with their land use base and natural resources.

There is general awareness that low-density residential development threatens farmland and open space, raises public service costs and taxes, encourages people and wealth to leave central cities, creates serious traffic congestion, and degrades the environment and our quality of life. In response to these trends, public interest groups, citizens and government at all levels have begun to search for solutions for slowing sprawl, preserving open space, and rebuilding our town and village centers, as well as our cities and older suburbs. This has led to a growing movement, often referred to as "smart growth", which represents a serious attempt to reverse the direction of current land use patterns and to enhance citizens' connections to place.

We engage community members in learning about and understanding community issues, and the various impacts associated with alternative courses of action. We work toward the long term sustainability and well being of communities through collaborations and partnerships and therefore are able to add to the "public value." Building local capacity for governance, enhancing local economies, and investing in human capital by providing research-based knowledge, public issues education, and education and training in areas such as community development and environmental management have long been elements of programming within Cornell Cooperative Extension.

The focus here is on community sustainability and the general principles behind the terminology of smart growth, quality communities, sustainability and conservation. Those principles and concepts include: multifunctionality of landscapes; creating a range of housing opportunities and choices; creating walkable and bikable communities; fostering distinctive, attractive communities with a strong sense of place; preserving open space, farmland, natural beauty, and critical environmental areas and resources; protecting public health and quality of life through sound environmental management; strengthening and directing development toward existing communities; making development decisions predictable, fair, and cost-effective; and encouraging community and stakeholder collaboration in development decisions.

#### Strengthening Community Economic Development (Plan 2.2)

Changes in the economy have left many of New York's cities, towns, and villages in a state of decline, but those same communities can work toward being vital, engaging and attractive by building on their strengths and by educating community members on skills and approaches to address their challenges. There is an educational and networking role based on research that offers models and frameworks. For example, the "layer cake" model offers a total development paradigm that embeds economic development within community development and highlights the followings layers: human infrastructure, support infrastructure, physical infrastructure and the economic base. There is an emerging framework being adopted nationally with the Cooperative Extension system called the community capitals approach. Research indicates that communities that invest in all seven capitals fare better than those that focus on two or three capitals and have greater success at achieving social equity, a vital economy, and a healthy ecosystem. The capitals are: financial, political, social, human, cultural, natural and built.

There are a multitude of challenges facing communities in New York State – and the nation as well – which result in strong need and priority for our educational programming:

- Loss of traditional economic base and current economic slowdown

- Intense competition for service employment
- Flat tax revenues in the face of increasing local government costs
- Unplanned sprawl threatening municipal tax base and family farms
- Changing face of agriculture
- Increasing residential segregation
- Weakening of traditional community based organizations & decreased civic involvement

Community and economic development needs to be entrepreneurial, community-driven, and anchored in local and regional assets. Practitioners and policymakers alike call for holistic approaches that simultaneously value and invest in economic opportunity, family and human capital, community vitality, infrastructure, and natural resources and environmental stewardship. Solutions share in common the need for good information and data systems, community planning systems, good decision-making processes, effective leadership, broad and inclusive civic engagement, technical assistance, new knowledge, and full communication across jurisdictions, agencies, and localities.

#### Priority Emphases

Strengthen Community and Economic Development:

Develop Land Use Management Approaches that Promote Sustainable Communities

Improved Quality of Life for Individuals and Families

Nutrition, Food Safety, and Health (Plan 3.1)

Overweight and obesity have reached epidemic proportions in the United States. An estimated 34 percent of U.S. adults, 20-74 years of age, were overweight in 1999-2000, with an additional 31 percent being obese. The Centers for Disease Control and Prevention (CDC) estimates that 40 percent of adults (69 million) will be obese by 2010 if trends go unchanged. Obesity is positively correlated with increased risk of chronic diseases such as cardiovascular disease, diabetes, stroke, hypertension, osteoporosis, and some forms of cancer. Type 2 diabetes, once only found in adults, is now more frequently showing up in children, even pre-adolescent children.

The prevalence of chronic diseases in general is higher in low-income populations and this is exacerbated by increased obesity. Approximately 14 percent of New Yorkers, including 17 percent of children, live below the federal poverty level. Higher rates of obesity have been associated with factors that may discourage walking or healthy eating, such as urban sprawl; living on a highway and/or having no sidewalks, paths, or shops within walking distance; and questionable neighborhood safety. It has also been associated with neighborhood deprivation. Low income is also associated with hunger and food insecurity as well as a myriad of additional health problems including poor pregnancy outcome, infant mortality, anemia, and growth retardation. Food insecurity and obesity or overweight can exist at the same time in a household. With an emphasis on this audience, CCE nutrition and health programs enable participants to improve the diet, health, and well-being of themselves, their families, and their communities. Program goals focus on food resource management, nutrition knowledge, food preparation and promoting breastfeeding.

While consumers report that they are more knowledgeable about and have improved their food safety practices, in reality, some are still unknowingly practicing some unsafe behaviors. The Center for Disease Control estimates that 76 million people get sick, more than 300,000 are hospitalized, and 5,000 Americans die each year from foodborne illness. Preventing foodborne illness and death remains a major public health challenge. Experts have ranked behaviors for the reduction of the risk of illness caused by major foodborne pathogens; this information can enable consumers to make informed choices about food consumption and handling behaviors and can guide food safety educators in prioritizing their educational efforts.

A variety of good agricultural and manufacturing practices can reduce the spread of microbes among animals and prevent the contamination of foods. Careful review of the whole food production process can identify the principal hazards, and the control points where contamination can be prevented, limited, or eliminated. A formal method for evaluating the control of risk in foods exists is called the Hazard Analysis Critical Control Point, or HACCP system. HACCP safety principles are now being applied to an increasing spectrum of foods and are incorporated in education with targeted food production audiences.

Parenting and Dependent Care (Plan 3.2)

Parenting and care-giving practices, care programs and policies affect the quality of life for children, youth, elders and their families. Cornell Cooperative Extension parenting and dependent care programs are designed to integrate research with community education on parenting and care-giving practices, care-giving program quality principles and standards, and care-related policies. Included in these efforts are training opportunities for workers providing child and elder care and policy makers at the state and local levels.

Good parenting practices differ across several developmental stages of childhood, and include range of outcomes, some of which can be customized to meet special needs, address cultural differences and still be sensitive to the needs of particular family structures. Grandparents, other relatives and kin raising children face major changes and special challenges. Most professionals who serve these grandparents and kin need more information to better address emerging social and educational concerns.

More than 36 million Americans are already over 65 and many are struggling to care for elderly parents. Over the next 10 years the number of direct elder care jobs is projected to increase at a much higher rate than employment in the overall labor market. Elder care issues array across a spectrum of types of care and include in home, in the community and long term nursing care. Therefore, education addressing eldercare issues can be targeted to family members of elders, service workers, institutions, communities and policy-makers.

Young children of working parents are typically in the care of others for a major part of each working day; school-age children are in a variety of care situations including self-care while their parents work. Community needs assessments frequently point to the lack of quality school-age child care programs. Research indicates the quality of child care provided is directly related to the level of education and training of child care providers. There is a continuing need for education on what constitutes high quality child care to parents select and monitor their children's care, as well as for those providing care and for other stakeholders and decision-makers. The retention of child- and elder-care workers affects the quality and availability of care.

#### Family Financial Security and Management of Housing and Energy Resources (Plan 3.3)

This program will improve the household financial security of targeted New York populations through money and energy management education and result in benefits to the economic vitality of communities as well. It will empower low and moderate-income households who are especially vulnerable to financial setbacks and have less disposable income to commit to savings. These populations lack access to financial advisors who target higher income individuals. It will assist low-income households who often live in poor-quality housing that has high levels of radon, carbon monoxide, lead, asbestos, and basement mold—adversely affecting residents. In addition, it will enhance older housing that is frequently less energy-efficient than new housing and inform households that have limited access to residential energy-efficient products and services. There are nearly 4 million low- and moderate-income individuals in a number of upstate New York State regions. By focusing on this group we will have a strong impact in a segment of the population that would benefit the most from improved skills in financial literacy, energy and air quality management. Limited and highly neighborhood-specific programming in New York City is a secondary potential priority.

Economic security, financial and other household resource management are educational priorities for Cornell Cooperative Extension in New York State.

Personal income levels in upstate New York increased at half the national rate during the 1990s thus putting a strain on household finances.

The unemployment rate for New York State in 2004 was 5.8%, down from 6.3% in 2003, but higher than the national rate of 5.53%

The average 2003 credit card debt in New York was \$5,184, higher than the national average of \$4,663.

High energy costs, particularly affecting the Northeast, further impact household budgets.

New York State imports 85 percent of the energy it consumes. Reducing this figure through increased energy efficiency will lead the state toward a more secure energy future with a decreased dependence on imported energy, protection of our environmental resources, and increased economic development and job growth.

On average, New Yorkers spend \$1,724 annually on energy per household. Reducing this figure creates more household disposable income, which, in turn, spurs economic growth.

#### Priority Emphases

Advancing Healthy Lifestyles, Safety, and Wellness

Improving Food Security

Enhancing Competence in the Practice of Nutrition

Improving Care Giving for Children and Elders

Strengthening Family Support Across the Life Course--Young to Aging Families and Elders

Reducing Stress and Violence

Improving the Quality of Housing, Home, School, and Workplace Environments

Indoor Environmental Quality

## Enhancing Personal Skills in Household Economics, Financial Literacy, and Resource Management

### Natural Resources and Environment

Connecting People to the Land and Their Environment (Plan 2.1) (shared with Community and Economic Vitality – see description above)

Viable and Sustainable Production Practices (Plans 1.2 and 1.3)

(shared with Agriculture and Food System Sustainability – see description above)

Renewable/Alternative Energy and Conservation (Plan 1.4)

(shared with Agriculture and Food System Sustainability – see description above)

### Natural Resource Management (Plan 4.1)

The Natural Resource Management Program is a multi-audience effort addressing agricultural and natural resource producers, community decision makers, businesses, organizations, and individual consumers. Sustainability of natural resources, enhancement of biodiversity and habitat, and natural resources management for economic vitality is critical to residents of New York State, who enjoy and rely on abundant, healthy, and diverse natural resources. Continuing applied research and education on natural resources management, including inventory and mapping methods; habitat; biodiversity; alternative land uses; and economics of sustainable natural resources, a viable local economy, and a healthy environment are critical to protecting, enhancing, and sustaining valuable natural resources.

With natural resources including forested mountains; aquatic environments from wetlands and marshes to estuaries to lakes; and an accompanying diversity of plant and animal species, New York residents rely on these resources for recreation, tourism, raw products such as timber and fish, and related businesses. Agricultural and natural resource producers, community decision makers, businesses, organizations, and individual consumers need current information on good management practices, alternative land uses, protection of open space, and development of environmentally-sustainable natural resource-based businesses. Communities need education targeted to their specific concerns, including the interaction of natural resources, the environment, and the economy.

### Water Resources Management (Plan 4.2)

The Water Resource Management Program is a multi-audience effort addressing agricultural and natural resource producers, community decision makers, businesses, organizations, and individual consumers. High quality and readily available water resources are critical not only for drinking and agriculture but for recreation, impacting most New York local economies; industry; and business. Current federal and state regulations place a great deal of emphasis and responsibility on local management of water resources. Continuing applied research and education on non-point source control; stormwater management; watershed management involving interaction of water, soil/land use management, waste management, and air; and resource allocation are critical to protecting, enhancing, and sustaining valuable water resources.

With water quality ranging from one of the most polluted water bodies in the nation, if not the world (Onondaga Lake), to some of the highest quality drinking water supplies (the New York City watershed and Skaneateles Lake); large quantities; flooding to drought conditions; twenty municipal areas subject to the Phase II Stormwater Regulations; fisheries; prolific sole-source aquifers to thousands of individual wells in fractured bedrock; and groundwater problems ranging from over-demand to industrial pollution to agricultural pollution, New York State residents, local government, agriculture and other businesses, and organizations need current information on groundwater and surface water resources management for both quality and quantity purposes. Communities need education targeted to their specific concerns, including groundwater and surface water, stormwater, non-point source pollution control, water conservation, waste management, and interaction of water resources with other resources and the economy.

### Priority Emphases

Improving Watershed and Water Resource Protection and Management, in Agricultural, Rural and Developed Systems

Improving Management Practices for Sustainable and Compatible Agricultural, Natural Resource, and Energy Systems

Improving Policy Makers' and Individual Citizens' Understanding of Different Planning and Management Practices to Make

Natural and Agricultural Systems More Sustainable

### Waste Management (Plan 4.3)

The Waste Management Program is a multi-disciplinary program that addresses waste management problems and broader

issues of waste generation and composition, waste reduction, risk management, environmental equity and public decision-making. Major goals are to improve the ability of local officials, businesses and the public to make informed waste management decisions and to enhance the competency of solid waste professionals through increased training opportunities. Up to date, objective, research-based knowledge is extended to a wide range of audiences, including county solid waste personnel, wastewater treatment plant operators, state and local highway personnel, state agencies, agricultural producers, individual home and landowners, and youth.

With a wide range of waste producers, including individual, agricultural, industrial, and government, New York residents, agricultural producers, businesses and industry, and government need current information and solutions on techniques for managing waste, reducing waste at the source, managing risk and environmental inequities resulting from waste generation and disposal practices.

## Youth Development

### Youth Community Action (Plan 5.1)

Purposeful action requires that we design learning experiences for youth to attain a voice; build youth/adult partnerships through staff and volunteer development, and actively engage youth in curriculum and program efforts. In its broadest sense, YCA refers to the authentic and meaningful engagement of young people in programs, organizations, and communities, where they have or share voice, influence, and decision-making authority. Youth-adult partnerships are more than good youth development. Young people's fresh ideas, conviction and willingness to work hard make them ideal partners in community change and social justice initiatives. Real youth-adult partnerships require young people and adults to share both power and responsibility, to listen and really hear one another, and to set aside all the stereotypes that each group represents to the other.

The youth community action movement underscores the importance of young people being engaged in leadership and / or decision-making roles now, not only at some point in the future when they have reached 'adulthood'. Youth-adult partnerships, based on mutual respect and trust, unleash the potential of both young people and adults, and provide a powerful tool to create positive and lasting change for individuals, organizations, and communities.

"Imagine a world where young people are fully engaged in decision-making about the issues that affect them. What challenges might they identify? What solutions might they discover? What would our communities—and nation—look like if youth were a meaningful and vital part of the process? The underlying concept of Youth in Governance [Youth Community Action] regards young people as necessary, fully engaged participants in their communities. Rather than seeing young people as "future citizens" or "future leaders," Youth in Governance [YCA] regards youth as capable individuals who contribute in meaningful, authentic ways to the organizations and communities where they live, learn, work, and play. – Carole MacNeil, Ph.D. Statewide Director, 4-H Youth Development, University of California at Davis Youth in Governance, Youth in Action: A National 4-H Initiative for Systemic Change.

### Positive Youth Development/Life Skills Development (Plan 5.2)

Youth development is defined as an ongoing process through which young people meet their needs and develop the competencies they perceive as necessary for survival and transition to adulthood. Youth development refers to the development of the whole person and is not focused on a single attribute, skill, or characteristic, but rather the mastery of competencies needed for happy and productive adulthood. Positive Youth Development is development that is positive and productive for both youth and their communities and occurs from an intentional process that promotes positive outcomes for young people by providing opportunities, choices, relationships, and the support necessary for youth to fully participate. In 4-H we talk about this intentional process in relationship to the essential elements that are necessary to ensure optimum development. Those essential elements that are critical to youth development and central to the 4-H experience are:

The opportunity to experience independence.

The opportunity to experience belonging.

The opportunity to experience generosity.

The opportunity to experience mastery.

The development of life skills through experiential learning is the foundation of 4-H programming. Healthy youth development strives to help young people develop the inner resources and skills they need to cope with pressures that might lead them to unhealthy and antisocial behaviors. To successfully grow into mature, productive, and contributing citizens, young people need to acquire:

Health/physical skills – having the appropriate knowledge, attitudes and behaviors that will ensure current and future health

Personal/social skills – personal skills such as an ability to understand one's emotions and practice self discipline; and

interpersonal skills such as working with others and developing and sustaining friendships

Cognitive/creative skills – a broad base of knowledge, knowledge application skills, life long learning skills and an ability to appreciate and demonstrate creative expression.

Vocational skills – understanding and awareness of life options and the steps necessary to accomplish them. Adequate preparation for work and family life.

Citizenship skills: understanding of the history and values of one's nation, community, race, ethnic and cultural heritage. Desire to be ethical and to be involved in contributing to the broader good.

The 4-H youth development program is unique among youth-serving organizations because it combines the strength of community based youth organization with the knowledge gleaned from university research to provide positive youth development opportunities. It is critical that demonstrated elements of positive youth development and building life skills remain the foundation to all 4-H youth development programs (clubs, camp programs, special interest groups, 4-H Afterschool, etc.).

One of the most important issues facing the 4-H youth development program is how to best support youth in becoming productive, contributing individuals of society. Leffert, Saito, Blyth, and Kroenke (1996) found the experiences young people have during early adolescence provide the foundation on which they develop their personalities and life skills. Early adolescence is a time of rapid change in young people, providing an opportune time to make a positive impact on their development.

The importance of reaching youth in early adolescence is well documented in a number of studies. The NYS 4-H Club study results show that the process of youth development is positively influenced in multiple ways by 4-H Club membership. The majority of Club members felt they had gained multiple life skills, including public speaking, problem solving, goal setting, leadership and planning skills, self-confidence, citizenship, communication skills, academic gains, expanded horizons, organizational skills, respect for (and from) others, patience, tolerance, and "real world" experience from hands-on projects. (Mead, June, Hirschl, Thomas, Rodriguez, Eunice, and Goggin, Steve, 1999).

Youth who are unsupervised after school are much more likely to engage in activities that place them at risk (Galambos & Maggs, 1991; Steinberg, 1986). Participation in high quality after-school programs is linked with a lower incidence of problem behaviors, such as decreased academic failure, substance use, and delinquency (Newsome, & Ferrari, 2003). Youth who attend these programs have demonstrated improved academic behaviors (better school attendance, more positive school attitudes, and better grades) and improved personal and social skills (positive relationships with adults, opportunity to make new friends; greater self-concept & self-esteem. (U.S. Department of Education & U.S. Department of Justice, 2000). 52% of teens in a survey conducted by the YMCA say they wish there were more after school activities in their neighborhood or community (YMCA of the USA, 2001). 67% of the teens surveyed in this study also said they would be likely to participate in after school programs that would help them get better grades, develop leadership skills, and be more involved in their community while having fun with other teens.

### Science and Technology Literacy (Plan 5.3)

In international comparisons, U.S. student performance in mathematics and science is at or below levels attained by students in other countries in the developed world (Science and Engineering Indicators 2004, National Science Board). The longer students stay in the current system the worse they do. According to the 1995 Third International Mathematics and Science Study, U.S. fourth graders ranked second. By twelfth grade, they fell to 16th, behind nearly every other industrialized rival and ahead of only Cyprus and South Africa. (No Child Left Behind, U.S. DOE) A survey of more than 1700 Science Educators found that 68% of those polled cite science literacy as "essential" for adults (Bayer Corporation, 1999). Hands-on learning has been shown to increase learning and achievement in science content (Mattheis & Nakayama, 1988; Brooks, 1988; Saunders & Shepardson, 1984; Bredderman, 1982). Research indicates that activity-based science can improve students' attitudes toward science (Rowland, 1990; Kyle, et al., 1988; Jaus, 1977; Kyle et al, 1985). Evidence clearly indicates that hands-on activities increase skill proficiency in processes of science, especially laboratory skills and specific science process skills, such as graphing and interpreting data (Mattheis & Nakayama, 1988). In a 1999 study of NYS 4-H club members, 80.9 percent of members surveyed reported that they prefer hands-on projects and 36.9 percent reported that it was the most important component of their club experience. (Mead et al, 1999).

Research links experiential learning with higher student performance in mathematics and science. 4-H has succeeded in providing such learning opportunities to kids. Approximately 500,000 New York state youth participate in educational 4-H activities centered in environmental education, biological and physical sciences, plant and animal sciences, technology and engineering, food and nutrition, and textiles and apparel. In fact, 77% of all 4-H curriculum has a science and/or technology



focus. The strong connection to science and technology exists, in part, because of the connection to Cornell and other land grant universities.

The Science and Technology Program Work Team is working to strengthen the connections between science and technology initiatives at Cornell University, other land grant universities and the Cornell Cooperative Extension Associations. The Science and Technology PWT is working on the NYS 4-H Resource Directory, making additional outreach connections and promoting staff development focused on outreach and science and technology.

**Priority Emphases**

Develop And Apply Youth Community Action Models And Methods

Advance Life Skill Development

Defining and Applying Principles Of Positive Youth Development

Enhancing Science And Technology Literacy

Notes on FTEs and Targets FTEs included in the plan are those deriving support from the applicable federal formula funds plus associated match. Some outputs and quite a few outcomes lack targets. We included local output indicators that will allow tracking by primary audience but have no reporting experience with this structure upon which to base accurate projections; we have been tracking in aggregate to date. Relative to outcomes, we accepted the suggestion offered in POW Newsletter Vol. 1, No. 6 and have eliminated targets for nearly all near-term outcomes. Relative to "missing" mid-term and longer-term outcomes, the rationale differs by indicator. In some cases, the outcome describes a new dimension of a program with which we do not have adequate experience to quantify longer-term outcomes. In a few others, we have not yet identified appropriate assessment strategies or resources. In a few, we are uncertain of the level of resource support that will be available. Rather than leave these out, we decided to include them to better convey program direction. We anticipate modifying the targets through the annual update process.

**Estimated number of professional FTEs/SYs to be budgeted for this plan.**

Year	Extension		Research	
	1862	1890	1862	1890
2007	247.7	0.0	120.5	0.0
2008	247.7	0.0	120.5	0.0
2009	247.7	0.0	120.5	0.0
2010	247.7	0.0	120.5	0.0
2011	247.7	0.0	120.5	0.0

**Merit Review Process**

**The merit review process that will be employed during the 5-Year Plan of Work cycle**

- Combined External and Internal University External Non-University Panel
- Expert Peer Review

**Brief explanation**

We use one integrated process for merit review for applied research and extension projects, including integrated and multistate activities. Key elements of the process are described here.

Review Process (Research Projects and Extension Projects with Designated Funding)1. Principal investigators are asked to consult program priorities (established as outlined in the stakeholder involvement section) and develop short pre-proposals for new or revised projects funded by Federal Formula Funds.2. Pre-proposals are reviewed for purpose and relevancy by advisory Program Councils (see stakeholder involvement section) and other external stakeholders, the principal investigator's department chair, Extension Program Associate/Assistant Directors, and the Experiment Station directorates (Ithaca and Geneva). Reviews are submitted via a secure website.

For research proposals:3. Pre-proposals are accepted/rejected; Principal Investigators develop accepted preproposals into full

proposals.4. The Department Chair recommends two or three peer reviewers to the Director's Office.5. The Director's Office obtains the necessary reviews in accordance with CSREES rules using standard format.6. Changes suggested by the peer reviewer are conveyed to the Principal Investigator. Peer reviewer names are not revealed to the Principal Investigator.7. The revised proposal, with required CRIS forms, is submitted to the Director's Office.8. The Director's Office submits the package to CSREES along with an attached statement certifying the peer review was completed.9. Reviews are kept on file in the Director's Office.10. The Director's Office attaches a statement to the proposal and sends this with the proposal and Form 10 to the CALS Research Office.11. After approval by CSREES, funds are allocated to the appropriate research account.

For extension proposals:3. Extension Program Directors rank/recommend extension preproposals.4. Extension Program Directors meet with Experiment Station (Ithaca and Geneva) staff to discuss potential R-E linkages among extension preproposals.5. Extension Program Directors finalize Smith-Lever funding recommendations and communicate decisions and needed modifications.

Cornell Review Criteria1. Anticipated significance of results relative to current priority needs or opportunities2. Scientific merit of objectives3. Clarity of objectives4. Appropriate methodology5. Feasibility of attaining objectives6. Accomplishment during preceding project (for revisions)7. Research performance and competence of investigator(s)8. Relevance of the proposed work to regional or national goals9. Level of research-extension integration

For ongoing extension work not captured in current funded projects, we rely on our structure of Program Councils and Program Work Teams for input and conduct regular program conferences with academic units to review program progress and direction.

### **Evaluation of Multis & Joint Activities**

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

Our multistate, multi-institutional, and integrated activities occur within the same stakeholder involvement and program development processes as other programs and, as such, are directed to priority needs of priority audiences. Our program development structure for federal formula funds is integrated by definition (see stakeholder involvement and merit review processes). Background information on our program development structure and process is available at: <http://hosts.cce.cornell.edu/admin/pwt/>

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

In contrast to many other states, the great majority of our integrated and multistate expenditures are in the form of funded projects; only the minor proportion is allocated for FTE support. Because they are incorporated in our ongoing program development structures and processes, integrated and multistate projects abide by and benefit from the stakeholder involvement and audience outreach processes outlined in the following section of this plan. We expect all projects to be grounded in relevant needs as articulated through our extensive stakeholder involvement structures and use a wide variety of methods to reach out to under-served and under-represented audiences (again, see stakeholder involvement section). The specific audiences and needs addressed are determined on a project-by-project basis as well as within the broader umbrella of priorities established through our advisory structures.

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

All projects are expected to outline expected outcomes and impacts and report against them. We require a "statement of relevancy," specific identification of intended outcomes, and descriptions of multistate and integrated activities in our project pre-proposal process and in final project descriptions. Ability to outline relevancy and specific intended outcomes is a primary determinant of funding decisions. Project leaders report against these outcomes and activities annually and upon project completion.

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

The fundamental purposes of these efforts are to strengthen quality of programming by bringing together required disciplines and to ensure efficient use and maximum leveraging of federal formula funds across institutions. For more than 15 years, we have progressively integrated planning and accountability processes for federal formula fund allocation for research and extension, providing greater focus on priority needs and greater efficiencies in program development.

Decision criteria for Regional Research funds illustrate the intent of greater effectiveness and efficiency. Regional funds are allocated by the Directors of CUAES and NYSAES among the various eligible projects based on the national research priorities plus the following criteria as specified in the USDA CSREES Manual for Cooperative Regional Research:

The problem involves evident cooperation and interdependence of disciplinary skills and insights, and their application to its solution.

Research on the problem requires more scientists, equipment, and facilities than are generally available at one experiment station.

The research approach is adaptable and particularly suitable for interstate and federal-state cooperation, resulting in better use of limited resources and a saving of research funds.

The project attracts additional support for research on the problem that is not likely to occur through other research programs and mechanisms.

The project is sufficiently specific to promise significant accomplishment in a reasonable period of time (five years or less).

The project can provide the solution to a problem of fundamental importance or fill an important gap in our knowledge from the standpoint of the present and future agriculture of the region.

The project can be effectively organized and conducted on a regional level.

The intent for multistate extension and integrated activities is parallel – greater program effectiveness by drawing on the broader expertise base of the land grant system and greater efficiency by eliminating parallel development of curricular resources and/or isolated research efforts. For some projects, efficiency and effectiveness are primary design criteria, such as for the eXtension effort or support for regional community development efforts. In others, those benefits accrue as a secondary to effective integration and collaboration in program development.

## Stakeholder Input

### 1. Actions taken to seek stakeholder input that encourages their participation (Check all that apply)

- 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

#### Brief explanation.

Gaining stakeholder input and encouraging stakeholder participation is a systemwide expectation of all levels and units. Across those levels and units, all of the stakeholder participation methods listed are employed (no single unit uses them all). All programs are advertised in accord with equal program opportunity practices including development of contact lists and formal and informal survey work.

At the state level, membership in our five program councils (Community and Economic Vitality, Quality of Life for Individuals and Families, Natural Resources and Environment, Youth Development, and Agriculture and Food Systems) is intentionally monitored to ensure involvement and ties to traditional and non-traditional constituents. These councils provide guidance for CCE, CUAES and NYSAES by setting broad priorities for applied research and extension programming.

In addition, we have 38 Program Work Teams comprised of extension educators, faculty, and stakeholders who work together to develop, implement and evaluate priority programs. Since 2001, thirty-eight (38) program work teams have been authorized and supported to develop and deliver integrated applied research and extension programming across the state. All PWTs are self-selected and self-directed affinity groups of external stakeholders, county extension educators, and campus-based researchers and extension specialists. PWTs are required to identify program needs in their selected issue areas and carry forth plans of work to meet those needs. PWTs are expected to nurture research-extension integration, to encourage campus-field interactions and collaborations, to take multi-disciplinary approaches, to evaluate their efforts, and to involve their external members in all aspects of their work. They are also expected to report annually on their accomplishments to an appropriate Program Council. Approximately 750 individuals serve on at least one PWT, including more than 260 external stakeholders. The externals come from the business, banking, local/state/federal government, non-government organization and educational sectors.

By definition, “under-represented or under-served” audiences are unlikely to be strongly represented among existing advisory bodies requiring that additional outreach steps be taken. One of the most effective strategies for gaining input and developing working relationships is by networking and partnering with organizations that do have credible relationships with target groups. Our local boards of directors and advisory committees include at least 300 such representatives statewide. Such organizational ties often lead to creative partnerships to engage under-served groups.

Effective involvement of youth in program determination and implementation is of particular concern. All of our local advisory

committees are expected to include youth members as part of the needs assessment and decisionmaking structure. In 2005, more than 3000 youth served in governance and program delivery roles statewide. In addition, one of our four extension signature programs is Youth Community Action which is a coordinated effort to develop active youth voice and meaningful partnerships between youth and adults.

**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

**Brief explanation.**

Again, looking at all levels of the system, all of the techniques listed are used; the mix of methods varies from site to site. All of our units are required to have active and diverse advisory processes. Our state level councils and work teams re described in other questions in this section. Needs assessments, focus groups, and use surveys are conducted at the level of individual program units as well as in our statewide plan of work process. In the latter, local units used a wide array of local surveys and data gathering to feed local needs into a statewide videoconference involving 250 extension educators. That session helped establish the priorities that led to the specific program plans included in this document. Again, partnering is a key strategy. For example, in 2006 we collaborated with the NYS Legislative Commission on Rural Resources to conduct a series of rural New York listening sessions that culminate this summer in a major planning conference.

**2(B). 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. 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)
- 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

**Brief explanation**

See response to previous two questions. This is viewed as a responsibility of all parties in the system. Data gathering activities vary by program and locale. Another key technique is representation on local, regional, state and national agency and organization advisory bodies of other organizations. An initial inventory of such roles within the College of Agriculture and Life Sciences indicated over 400 such relationships.

**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

**Brief explanation.**

The stakeholder input process for statewide program development jointly utilized by Cornell Cooperative Extension (CCE), the Cornell University Agricultural Experiment Station (CUAES), and the New York State Agricultural Experiment Station (NYSAES) was established in February 2001. The process informs federal formula funding priorities and provides project specific input on relevance and value of proposed work. In other words, our program councils and program work teams worked to improve program focus, relevance, and planning activities. We have reviewed funding decisions versus advisory input and can confidently conclude that stakeholders are having a powerful voice in the direction of our programs. Our program councils also advise the directors of CCE and CUAES on annual statewide program priorities, review Program Work Team performance and identify "gaps" in programmatic coverage.

Priorities are updated annually either through face-to-face meetings or electronic means such as a multi-staged, web-based survey process to not only revise priorities for research and extension support, but also for incorporation into the foundational phase of the year-long process to develop this plan of work.

Perhaps even more important is the influence of stakeholder input in determining local programming. Our county extension associations and multi-county programs are semi-autonomous, much more so than in many states. The program of work of each unit is established under guidance of stakeholders in local advisory structures and governing boards and through environmental scanning activities conducted as part of our plan of work process. Such input has immediate and specific influence on program direction and strategy.

**1. Name of the Planned Program****1.1 Agricultural and Horticultural Business Vitality****2. Program knowledge areas**

- 604 Marketing and Distribution Practices 8 %
- 601 Economics of Agricultural Production and Farm Management 7 %
- 606 International Trade and Development 10 %
- 603 Market Economics 5 %
- 611 Foreign Policy and Programs 5 %
- 610 Domestic Policy Analysis 10 %
- 605 Natural Resource and Environmental Economics 10 %
- 511 New and Improved Non-Food Products and Processes 20 %
- 602 Business Management, Finance, and Taxation 10 %
- 609 Economic Theory and Methods 15 %

**3. Program existence**

- Mature (More than five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Agriculture, horticulture, and related business vitality work is critical to the land grant mission. Cornell University has a commitment to the farm and agricultural/horticultural business industries of New York State and to assist key decision makers in making the best choices in managing their farms or agriculturally related businesses. Research and educational programs help business owners improve productivity and sustainability through resource management, adoption of new technologies and practices, improved marketing strategies and business management skills and by looking to alternative enterprises. Farmers and horticulturalists utilize research-based knowledge to continue producing a stable, safe and affordable food supply and horticultural products in economically and environmentally sustainable ways.

**6. Situation and priorities**

Agricultural and food industries contribute an estimated \$30 billion a year to New York State's economy. Non-food horticultural businesses contribute a significant amount in addition to the numbers listed. The absolute size of New York State's agriculture, as measured by real sales of agricultural products, has increased modestly over the last 20 years. Declines in meat livestock have been offset by small increases in the dairy industry resulting in relatively constant livestock sales. However, increases in vegetables, oil seed and horticulture crop sales have raised the total level of crop production.

The total number of people employed in agriculture has been relatively stable with some modest increases in recent years. Structural change has resulted in increased numbers of agricultural service jobs as specialized service firms now conduct a number of the functions that used to be done by the farmers themselves. 37,000 farms use almost 25% of the State's land area or 7.6 million acres. The land and farm buildings owned by New York farmers are valued at over \$12 billion. Nearly 2,600 horticultural businesses used over 25,800 acres, plus more than 31 million square feet of greenhouse space.

Although there is every reason to believe that the dairy industry, the largest agricultural enterprise, will remain competitive and continue as the dominant industry in New York State, the vegetable and ornamental horticulture industries are expanding, with the horticulture industry showing nearly 50 percent growth since 1985. Nearness to the east coast urban areas provides demand for fresh quality fruits and vegetables and a wide variety of ornamental horticulture products.

The structural change taking place in much of New York agriculture, combined with expansion in the vegetable and horticulture businesses, results in a vibrant industry with the potential for a strong future. However, to remain competitive that industry needs highly qualified new employees and research and outreach support on the continuing and emerging issues that rapid change engenders.

**7. Assumptions made for the Program**

Producers and horticultural business people often are not fully aware of the programs, contacts, and resources available to them to assist with business management/development needs.

Many agricultural/horticultural business have opportunity to strengthen profitability through improved planning and management.

There is opportunity for growth in the agricultural/horticultural sector through alternative, new, and value added enterprises which may not be apparent to existing business people or potential investors.

The supply and effective management of labor resources is a key to the viability of agricultural and horticultural enterprises.

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

Long-term viability and well being of the agricultural/horticulture industry and rural communities in New York State. Economically and environmentally sound products and practices, and safer and healthier products.

**9. Scope of Program**

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	16.7	0.0	5.0	0.0
2008	16.7	0.0	5.0	0.0
2009	16.7	0.0	5.0	0.0
2010	16.7	0.0	5.0	0.0
2011	16.7	0.0	5.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a comprehensive, statewide educational program entailing a wide variety of applied research and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Key audiences served, directly and indirectly, in enhancing agricultural and horticultural business viability include: Established producers; new and young producers, consultants and service providers, input suppliers, cooperative directors and managers, marketing firms, governmental agencies, lenders, and local/state/federal governmental leaders.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	12000	35000	0	0
2008	12000	35000	0	0
2009	12000	35000	0	0
2010	12000	35000	0	0
2011	12000	35000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# persons completing education programs on the labor needs of agriculture/horticulture businesses and and/or the needs of potential employees. (1.1.3a)

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0



**Output Text**

# producers/horticulture business persons completing education programs on business management, finance, business planning and marketing, human resource management, risk management, production economics, and business transitions. (1.1.1a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# producers/horticulture business persons completing programs to expand profitability, develop marketing options, diversify or substitute alternative products or enterprises, and/or increase operational efficiencies. (1.1.2a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of non-credit instructional activity contact hours directed to this plan.

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of non-credit instructional activities directed to this plan.

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# funded applied research projects directed to this program.

2007	Target:	16
2008	Target:	16
2009	Target:	16
2010	Target:	16
2011	Target:	16

**Output Text**

# refereed publications directed to this program

2007 Target: 85  
2008 Target: 85  
2009 Target: 85  
2010 Target: 85  
2011 Target: 85

## Outcomes for the Program

### 19. Outcome measures

#### Outcome Text: Awareness created

##### Outcome Text

# participants demonstrating knowledge or skill gains re business management, finance, business planning and marketing, human resource management, risk management, production economics, inter-generational transfer and other business transitions. (1.1.1b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

##### Outcome Text

# participants demonstrating knowledge or skill gains related to expanding profitability, develop marketing options, diversify or substitute alternative products or enterprises, and/or increase operational efficiencies to solve immediate concerns. (1.1.2b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

##### Outcome Text

# participants who demonstrate knowledge gains related to needs of potential employees and/or availability of qualified employees. (1.1.3b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

##### Outcome Text

# participants documented to have applied knowledge or skills gained to strengthen existing business operations. (1.1.1c)

**Outcome Type:** Medium

2007 Target: 4000  
2008 Target: 4000  
2009 Target: 4000  
2010 Target: 4000  
2011 Target: 4000

**Outcome Text**

# participants documented to have initiated one or more alternative or expanded ventures. (1.1.2c)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# participants or producer groups who adopt practices of value-added production through retaining control of their product further in the processing chain, starting their own value added business, or forming alliances. (1.1.2d)

**Outcome Type:** Medium

2007 Target: 50  
2008 Target: 50  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

# participants documented to have made one or more changes in human resources practices to enhance labor availability or retention. (1.1.3c)

**Outcome Type:** Medium

2007 Target: 3000  
2008 Target: 3000  
2009 Target: 3000  
2010 Target: 3000  
2011 Target: 3000

**Outcome Text**

# participating family-owned agricultural/horticultural businesses that plan for succession, transfer, or sale of their business. (1.1.1d)

**Outcome Type:** Medium

2007 Target: 20  
2008 Target: 20  
2009 Target: 20  
2010 Target: 20  
2011 Target: 20

**Outcome Text**

# participants reporting improved agricultural/ horticultural business profitability attributed at least in part to program participation. (1.1.1e)

**Outcome Type:** Long

2007 Target: 2500  
2008 Target: 2500  
2009 Target: 2500  
2010 Target: 2500  
2011 Target: 2500

**Outcome Text**

# of new food, horticultural, and agricultural businesses and/or new enterprises within existing businesses reported by program participants and attributed at least in part to program participation. (1.1.2e)

**Outcome Type:** Long

2007 Target: 75  
2008 Target: 75  
2009 Target: 75  
2010 Target: 75  
2011 Target: 75

**Outcome Text**

# producers/horticultural businesses reporting improved labor availability, performance, and/or retention of higher skilled and more valuable human resource team members attributed at least in part to program participation. (1.1.3d)

**Outcome Type:** Long

2007 Target: 2000  
2008 Target: 2000  
2009 Target: 2000  
2010 Target: 2000  
2011 Target: 2000

**Outcome Text**

# business owners successfully completing an intergenerational transfer or other desired dispensation of their business attributed at least in part to program participation. (1.1.1d)

**Outcome Type:** Long

2007 Target: 25  
2008 Target: 25  
2009 Target: 25  
2010 Target: 25  
2011 Target: 25

**20. External factors which may affect outcomes**

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities

**Description**

Agricultural/horticultural enterprises operate in a complex and volatile context involving susceptibility to weather extremes, changing governmental policies and regulations, competitive land uses and shifting development patterns, evolving consumer demands, and globally influenced markets. Fundamental change is occurring in the state and regional economies within which agricultural and horticultural enterprises operate. The specific implications of these external factors vary greatly by locale and across commodities and business forms.

## 21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- During (during program)
- Case Study
- Comparisons between program participants (individuals,group,organizations) and non-participants

### Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations. Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 20005) to systematize and improve the rigor of success story collection.

**1. Name of the Planned Program****1.3 Viable and Sustainable Production Practices -- Plant****2. Program knowledge areas**

- 211 Insects, Mites, and Other Arthropods Affecting Plants 15 %
- 215 Biological Control of Pests Affecting Plants 8 %
- 204 Plant Product Quality and Utility (Preharvest) 7 %
- 205 Plant Management Systems 11 %
- 216 Integrated Pest Management Systems 12 %
- 201 Plant Genome, Genetics, and Genetic Mechanisms 6 %
- 206 Basic Plant Biology 1 %
- 203 Plant Biological Efficiency and Abiotic Stresses Affecting Plants 11 %
- 202 Plant Genetic Resources 3 %
- 212 Pathogens and Nematodes Affecting Plants 26 %

**3. Program existence**

- Mature (More than five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Cornell University has a commitment to agriculture, horticulture, and natural resources enterprises and assisting them in making the best choices when selecting production principles and practices to enhance economic and environmental sustainability. We provide comprehensive research and education programming focused on assessing existing and new production-management practices and techniques with special emphasis on agricultural environmental management. As part of our strategy, we emphasize integration of research and extension to accelerate: identification of problems, focusing scientific effort to resolving problems, field-testing and evaluation of technology and cultural practices, and implementation of environmentally superior innovations/practices for the agricultural, horticultural, and natural resource communities.

**6. Situation and priorities**

Improving production efficiency, quality and safety of plants and animals in agricultural, horticultural, and natural resource production systems is fundamental to improving our ability to compete in a global economy. Managers of New York's more than 40,000 farms and horticultural producers, and 3,000+ natural resource producers face dynamic and complex production environments. Extensive knowledge and skill is needed for identifying, selecting, and adopting principles and practices that optimize production management and improve profitability and sustainability in accordance with business goals. Technologies such as genetic engineering, satellite imagery and GIS, computer aided management decision tools and the like were in exploratory phases a decade or less ago but are readily available today for adoption and use. Technical assistance providers have similar needs to remain up-to-date and able to provide appropriate recommendations for each enterprise.

Production improvements can be accomplished through: 1) incorporating established and new practices and technologies; 2) traditional and modern genetics which select for desired traits (such as yield, flavor and pest resistance) and an understanding of how they can be expressed under different environmental regimes; 3) improving our understanding of the nutritional requirements for plants and animals so that inputs and waste products are minimized; 4) improving our understanding of soils and soil management techniques in order to maintain or improve the health of the soil and reduce losses to the environment; 5) improving our understanding of the impact of environmental conditions on plant and animal production.

Protecting and improving the integrity of our environment and maintaining ecological systems enables human prosperity. Expanding human populations cause growing consumer demands on the agriculture and food system. This magnifies the challenges of balancing food production and processing with land stewardship and protection of the environment. The long-term sustainability of agriculture is inexorably linked to environmental quality.

Specific emphasis is placed on: assessing existing and new production-management practices and techniques; improved

product handling and storage to maintain quality and safety; crop choices for sustainability and profitability, and improving production efficiency through adoption of best management practices. We place special emphasis on agricultural environmental management including topics such as: potential environmental impacts of practices; requirements and opportunities of environmental regulations and programs; whole farm systems including integrated nutrient management, integrated pest management and environmental protection; waste management and recycling methods for sustainable agricultural production and environmental protection; water conservation and protection measures; and soil health management and protection. New regulations and guidelines, including the Confined Animal Feeding Operations regulations, have created opportunities for more multi-disciplinary research, for example, precision animal feeding as an aspect of nutrient management on farms and nutrient management as an aspect of watershed management.

#### **7. Assumptions made for the Program**

Producers, horticultural business people, and natural resource managers often are not fully aware of or skillful in managing production principles and practices that may help optimize their operations for economic and environmental sustainability.

Producers, horticultural business people, and natural resource managers often are not fully aware of potential environmental impacts of their operations and/or requirements and opportunities of environmental regulations and programs.

Technical assistance providers relied upon by producers, horticultural business people, and natural resource managers have parallel needs for current information on appropriate production practices.

In most cases, it is possible to simultaneously meet economic and environmental sustainability goals.

Integrated system approaches are needed to expand our understanding of trade-offs and develop BMPs that better address current and future challenges as well as food safety.

#### **8. Ultimate goal(s) of this Program**

Agriculture remains an important contributor to the economic and social health of New York communities.

Producers, horticulture businesses, and natural resource managers optimize production management and improve profitability and sustainability in accordance with their goals.

Increased use of sustainable practices results in improved or protected soil, air and water quality and production of high quality and safe food and fiber.

Improved soil health and productivity, resulting in increased farm profitability and improved environmental quality.

#### **9. Scope of Program**

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

#### **Inputs for the Program**

##### **10. Expending formula funds or state-matching funds**

- Yes

##### **11. Expending other than formula funds or state-matching funds**

- Yes

##### **12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	7.8	0.0	60.0	0.0
2008	7.8	0.0	60.0	0.0
2009	7.8	0.0	60.0	0.0
2010	7.8	0.0	60.0	0.0
2011	7.8	0.0	60.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a comprehensive, statewide educational program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Key audiences served, directly and indirectly include: established producers; new and young producers, consultants and service providers, input suppliers, governmental agencies, and local and state agricultural leaders.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	4500	15000	0	0
2008	4500	15000	0	0
2009	4500	15000	0	0
2010	4500	15000	0	0
2011	4500	15000	0	0

**17. (Standard Research Target) Number of Patents**



Expected Patents	
Year	Target
2007	60
2008	60
2009	60
2010	60
2011	60

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# producers/horticulture business persons completing education programs on existing and new production-management practices and techniques. (1.3.1a)

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# producers/horticulture business persons completing education programs on potential environmental impacts of practices; requirements and opportunities of environmental regulations and programs; whole farm systems. (1.3.2a)

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 120  
2008 Target: 120  
2009 Target: 120  
2010 Target: 120  
2011 Target: 120

**Output Text**

# refereed publications directed to this program

2007 Target: 600  
2008 Target: 600  
2009 Target: 600  
2010 Target: 600  
2011 Target: 600

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# program participants demonstrating knowledge or skill gains related to existing and new production-management practices and techniques. (1.3.1b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# participants who demonstrate knowledge or skill gains related to potential environmental impacts of practices; requirements and opportunities of environmental regulations and programs; and/or whole farm systems. (1.3.2b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# producers, horticulture businesses, and natural resource managers documented to have modified existing practices or technologies and/or adopted new production management practices/technologies to address current issues and improve efficiency. (1.3.1c)

**Outcome Type:** Medium

2007 Target: 2200  
2008 Target: 2200  
2009 Target: 2200  
2010 Target: 2200  
2011 Target: 2200

**Outcome Text**

# technical assistance providers documented to have incorporated current best management practices in their recommendations. (1.3.1e)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# producers, horticulture businesses, and natural resource managers documented to have assessed potential environmental impacts of their operations and developed and acted on plans to eliminate or minimize those concerns. (1.3.2c)

**Outcome Type:** Medium

2007 Target: 2000  
2008 Target: 2000  
2009 Target: 2000  
2010 Target: 2000  
2011 Target: 2000

**Outcome Text**

# producers, horticulture businesses, and natural resource managers who report improved ability to anticipate and respond to environmental and market variations through alternative crop or production management strategies. (1.3.1d)

**Outcome Type:** Medium

2007 Target: 1200  
2008 Target: 1200  
2009 Target: 1200  
2010 Target: 1200  
2011 Target: 1200

**Outcome Text**

# producers, horticulture businesses, natural resource managers documented to develop or modify and implement nutrient management/waste management plans to meet production and environmental goals and regulations. (1.3.2d)

**Outcome Type:** Medium

2007 Target: 500  
2008 Target: 500  
2009 Target: 500  
2010 Target: 500  
2011 Target: 500

**Outcome Text**

# producers, horticulture businesses, and natural resource managers documented to have Improved profitability and/or vitality resulting from enhanced production management practices. (1.3.1f)

**Outcome Type:** Long

2007 Target: 1800  
2008 Target: 1800  
2009 Target: 1800  
2010 Target: 1800  
2011 Target: 1800

**Outcome Text**

# producers, horticulture businesses, and natural resource managers documented to meet or exceed current environmental protection standards as a result of participating in relevant educational programs. (1.3.2e)

**Outcome Type:** Long

2007 Target: 250

2008 Target: 250

2009 Target: 250

2010 Target: 250

2011 Target: 250

**Outcome Text**

# resource managers reporting reduced environmental concerns for participating enterprises. (1.3.2f)

**Outcome Type:** Long

2007 Target: 20

2008 Target: 20

2009 Target: 20

2010 Target: 20

2011 Target: 20

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Public Policy changes
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Agricultural/horticultural enterprises operate in a complex and volatile context involving susceptibility to weather extremes, changing governmental policies and regulations, competitive land uses and shifting development patterns, evolving consumer demands, and globally influenced markets. Fundamental change is occurring in the state and regional economies within which agricultural and horticultural enterprises operate. The specific implications of these external factors vary greatly by locale and across commodities and business forms. Population and land use changes in farming communities can lead to producer/neighbor issues that influence choice of production practices.

**21. Evaluation studies planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study
- Comparison between locales where the program operates and sites without program intervention

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations. Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Tests
- Other

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 1.4 Renewable/Alternative Energy and Conservation

## 2. Program knowledge areas

- 401 Structures, Facilities, and General Purpose Farm Supplies 6 %
- 404 Instrumentation and Control Systems 45 %
- 402 Engineering Systems and Equipment 49 %

## 3. Program existence

- Intermediate (One to five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

With some of the highest energy costs in the nation, New York residents, businesses, and organizations need current information on energy supply alternatives and practical energy conservation and cost-saving measures to maintain financial security and vitality. Producers and community leaders need information on new or renewed energy production alternatives and policies and management alternatives that promote energy conservation to make informed investment and policy decisions.

## 6. Situation and priorities

The Renewable/Alternative Energy and Conservation Program is a multi-emphasis, multi-audience effort addressing agricultural and natural resource producers, community decision makers, and individual consumers. The program addresses USDA priorities related to renewable energy investments in rural areas, its bioenergy programs that encourage increased purchases of eligible commodities for the purpose of expanding production and supporting new production capacity for bioenergy (focused on ethanol and biodiesel), and energy efficiency/conservation initiatives to reduce costs to producers and environmental costs of agricultural/natural resource production. The program also addresses additional energy alternatives such as wood and grass pellet fuel production, recycling of vegetable oils as biodiesel, wind and solar energy production.

High energy costs, particularly affecting the Northeast, further impact household budgets. New York State imports 85 percent of the energy it consumes. Reducing this figure through increased energy efficiency will lead the state toward a more secure energy future with a decreased dependence on imported energy, protection of our environmental resources, and increased economic development and job growth. On average, New Yorkers spend \$1,724 annually on energy per household. Reducing this figure creates more household disposable income which, in turn, spurs economic growth. Lower-income homeowners and renters are particularly hard hit by escalating energy costs and need appropriate alternatives for conserving energy and reducing costs, particularly for housing and transportation. A wide array of energy subsidies and conservation incentives are available to individuals and community organizations, but they are fractionated and unevenly available leading to confusion and inequitable treatment. Community agencies/organizations and local governments need to understand how their policies and practices influence energy use and adopt strategies to promote energy conservation.

## 7. Assumptions made for the Program

There are new or renewed opportunities for locally owned energy production, including biofuels.

Energy expenditures on local or in-state owned production alternatives stay in the state and local economies to the betterment of residents.

Reduction of energy use provides cost savings to businesses, individuals, and, local governments and organizations and may retain dollars in the state and local economies.

## 8. Ultimate goal(s) of this Program

High energy costs will continue to significantly affect NYS residents.

Use of locally produced and owned energy sources and/or lower cost external sources retains energy dollars within the local and state economy providing enhanced economic well being.

The economic vitality of agricultural/horticulture/natural resource and supporting businesses, the financial security of individuals and families are enhanced and local government operations made more sustainable through reduced energy costs.

**9. Scope of Program**

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	2.5	0.0	3.0	0.0
2008	2.5	0.0	3.0	0.0
2009	2.5	0.0	3.0	0.0
2010	2.5	0.0	3.0	0.0
2011	2.5	0.0	3.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a statewide educational program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Agricultural/horticulture/natural resource and supporting businesses are targeted both regarding biofuels production opportunities and information regarding alternative energy sources and conservation. Consumers, property managers, and community leaders are targeted for information regarding energy supply alternatives and energy conservation options for

residential, facilities, and transportation needs. Citizens, community agencies and organizations are targeted for energy-related policy education efforts particularly as related to development of alternative energy sources and the interaction between land use and energy conservation.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	17500	200000	1000	0
2008	17500	200000	1000	0
2009	17500	200000	1000	0
2010	17500	200000	1000	0
2011	17500	200000	1000	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.



2007 Target: 6  
2008 Target: 6  
2009 Target: 6  
2010 Target: 6  
2011 Target: 6

**Output Text**

# agricultural producers and agribusiness representatives completing educational programs on the potential for development of biologically-based fuels. (1.4.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# local and state leaders completing educational programs on the potential for development of biologically-based fuels such as biodiesel, ethanol, methane, recycled vegetable oils, space heating fuels etc. (1.4.1b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# agricultural producers and agribusiness, and natural resource business representatives completing educational programs about cropping for biofuels production. 1.4.1c)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# agricultural/horticulture/ natural resource and supporting business representatives completing educational programs about the availability and pros and cons of alternative energy sources and/or about potential energy savings in operations. (1.4.2a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# consumers and community leaders completing educational programs about the availability and pros and cons of alternative energy sources and/or about energy conservation strategies and actions especially related to housing and transportation. (1.4.3a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# consumers, property managers, and/or housing officials completing education programs on energy conservation strategies and actions. (1.4.3b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# community members, leaders and officials completing education programs about the relationships between development patterns and energy use/costs. (1.4.4a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publication directed to this program.

2007 Target: 10  
2008 Target: 10  
2009 Target: 10  
2010 Target: 10  
2011 Target: 10

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# agricultural producers, agribusiness, or local and state leaders who demonstrate knowledge gains about the potential for development of biologically-based fuels. (1.4.1d)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# forest owners and purchasers of forest products who demonstrate knowledge or skills gains about current markets for firewood and chips/pellets and associated cropping practices. (1.4.1e)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# agricultural/horticulture/ natural resource and supporting businesses who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources and/or potential energy savings in operations. (1.4.2b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# consumers and/or community leaders who demonstrate knowledge or skills gains about the availability and pros and cons of alternative energy sources and/or energy conservation strategies and actions especially related to housing and transportation. (1.4.3a)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# consumers, property managers, and/or housing officials who demonstrate knowledge or skill gains related to energy conservation strategies and actions. (1.4.3b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# community members, leaders and officials who demonstrate knowledge gains about the relationships between development patterns and energy use/costs. (1.4.4b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# producers, economic development organizations and other groups collaborate to establish biofuels as a viable alternative crop. (1.4.1f)

**Outcome Type:** Medium

2007 Target: 150

2008 Target: 150

2009 Target: 150

2010 Target: 150

2011 Target: 150

**Outcome Text**

# of existing or new producers documented to have modified existing practices or technologies and/or adopted new production management practices for biofuels production. (1.4.1g)

**Outcome Type:** Medium

2007 Target: 50

2008 Target: 50

2009 Target: 50

2010 Target: 50

2011 Target: 50

**Outcome Text**

# of agricultural/horticultural/natural resource businesses documented to have adopted appropriate alternative energy sources and/or energy conservation practices. (1.4.2c)

**Outcome Type:** Medium

2007 Target: 2500

2008 Target: 2500

2009 Target: 2500

2010 Target: 2500

2011 Target: 2500

**Outcome Text**

# of consumers documented to have adopted appropriate alternative energy sources and/or energy conservation practices. (1.4.3e)

**Outcome Type:** Medium

2007 Target: 8500

2008 Target: 8500

2009 Target: 8500

2010 Target: 8500

2011 Target: 8500

**Outcome Text**

# of community agencies/organizations documented to have adopted appropriate alternative energy sources and/or energy conservation practices. (1.4.3g)

**Outcome Type:** Medium

2007 Target: 1000

2008 Target: 1000

2009 Target: 1000

2010 Target: 1000

2011 Target: 1000

**Outcome Text**

# communities documented to have assessed local energy development proposals and/or the relationships between current policies and regulations and energy conservation. (1.4.4c)

**Outcome Type:** Medium

2007 Target: 30  
2008 Target: 30  
2009 Target: 30  
2010 Target: 30  
2011 Target: 30

**Outcome Text**

# of producers, horticulture businesses and/or natural resource managers reporting that cropping for and/or use of biofuels leads to increased economic returns to their enterprises. (1.4.1h)

**Outcome Type:** Long

2007 Target: 35  
2008 Target: 35  
2009 Target: 35  
2010 Target: 35  
2011 Target: 35

**Outcome Text**

# of producers/horticulture businesses/natural resource managers documented to have improved economic returns to agricultural/ horticultural business profitability and vitality resulting from adopting alternative energy sources and/or energy conservation. (1.4.2d)

**Outcome Type:** Long

2007 Target: 1800  
2008 Target: 1800  
2009 Target: 1800  
2010 Target: 1800  
2011 Target: 1800

**Outcome Text**

# of consumers who report savings on energy costs attributable to adopting alternative energy sources and/or energy conservation measures. (1.4.3h)

**Outcome Type:** Long

2007 Target: 5000  
2008 Target: 5000  
2009 Target: 5000  
2010 Target: 5000  
2011 Target: 5000

**Outcome Text**

# of community agencies/organizations reporting savings on energy costs attributable to adopting alternative energy sources and/or energy conservation measures. (1.4.3i)

**Outcome Type:** Long

2007 Target: 600  
2008 Target: 600  
2009 Target: 600  
2010 Target: 600  
2011 Target: 600

**Outcome Text**

# of communities documented to have established or modified land use and development policies to promote energy conservation. (1.4.4d)

**Outcome Type:** Long

2007 Target: 5

2008 Target: 5

2009 Target: 5

2010 Target: 5

2011 Target: 5

**Outcome Text**

# of program participants documented to have taken measures to improve energy efficiency of existing and new buildings. (1.4.3f)

**Outcome Type:** Medium

2007 Target: 5000

2008 Target: 5000

2009 Target: 5000

2010 Target: 5000

2011 Target: 5000

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

**Description**

The interaction between natural disasters, the economy, and energy costs is well documented. Weather in particular has interrupted supplies and dramatically influences heating and cooling costs. Appropriations, public policy, and regulations directly affect ability to pursue energy source alternatives, including biofuels development, and to implement energy conservation alternatives, particularly for low-income households.

**21. Evaluation studies planned**

- After Only (post program)
- Retrospective (post program)
- During (during program)
- Case Study

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

**22. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Other

**Description**

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 1.5 The Agriculture/Community Interface

## 2. Program knowledge areas

- 315 Animal Welfare/Well-Being and Protection 6 %
- 803 Sociological and Technological Change Affecting Individuals, Families and Communities 94 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

By its very nature, this program varies greatly across communities. Typical activities include support of community farmland protection initiatives, public issues education related to specific agriculture/community conflict issues, agricultural awareness programming for adults and youth, and community-based food and agriculture initiatives. Applied research focuses on changing land use patterns and factors that promote or inhibit agriculture/horticulture/ natural resource enterprise development and community-based agriculture.

## 6. Situation and priorities

New York is a diverse state with a complex mix of metropolitan, suburban and rural areas. Even in the most rural areas, changing populations and land use patterns often bring agriculture/horticulture/natural resource enterprises in contact with neighbors or visitors who do not understand or appreciate the nature of their operations and contributions to the community. Local municipal leaders must balance private property rights, community growth, quality of life issues and environmental protection. Often, the land that is most desirable and economical for food production is also the land that is most attractive for development. From the agricultural production perspective, a critical mass of farmland and the right to engage in accepted agricultural practices is imperative to maintain a viable local farm economy. The flexibility to adapt based on the location and evolution of the farm business to meet the needs of today's society is essential to retain or allow for the expansion of existing farm, horticulture, natural resource, and food industry businesses. Many local residents are two to four generations removed from the farm. In some cases, when they move into more rural areas, issues arise over noise, odors, dust, and slow moving farm vehicles. In other situations, long time residents become engaged in conflicts with their farm neighbors as the farm business changes to remain competitive in a global market or attempts to attract local customers through the production and marketing of a niche product. (Adapted from Harrison, R. 2002. Municipal Reference For Agricultural Land Use Planning, Cornell Cooperative Extension.)

## 7. Assumptions made for the Program

Agriculture/horticulture/natural resource enterprise managers often are not fully aware of how their operations impact or are viewed by community members and leaders.

Community members and leaders often lack understanding of the nature and values of agriculture/horticulture/ natural resource enterprise operations, their constraints, and how local policy affects business viability.

Consumers lack knowledge of the food and agriculture system, its benefits and limitations.

Collaboration between agriculture/horticulture/natural resource enterprises, community leaders and members can lead to identification of mutual interests and minimization or resolution of conflicts.

## 8. Ultimate goal(s) of this Program

Conflicts between agriculture/horticulture/natural resource enterprises and community members are avoided or minimized and resolved within communities when they occur.

Agriculture/horticulture/natural resource enterprises are viewed as contributing and positive elements in the community.



**9. Scope of Program**

- In-State Extension
- In-State Research
- Integrated Research and Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	6.3	0.0	2.0	0.0
2008	6.3	0.0	2.0	0.0
2009	6.3	0.0	2.0	0.0
2010	6.3	0.0	2.0	0.0
2011	6.3	0.0	2.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Program activities/outputs are situation-specific but typically involve the full range of public issues education roles and methods and more general individual, group and media approaches directed to promoting awareness of issues and opportunities.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Agriculture/horticulture/natural resource enterprise managers, community residents and visitors, youth, local media, local officials, and local planning and economic development staff.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	3500	150000	5000	30000
2008	3500	150000	5000	30000
2009	3500	150000	5000	30000
2010	3500	150000	5000	30000
2011	3500	150000	5000	30000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# of agriculture/ horticulture/natural resource business persons participating in education programs on potential environmental, health, social, and cultural impacts of their operations from the perspective of the community. (1.5.1a)

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# of community members participating in education programs on the roles of agriculture/horticulture/ natural resource enterprises in the local community, tax base, and environment. (1.5.2a)

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# of local leaders participating in education programs on the roles of agriculture/horticulture/ natural resource enterprises in the local community and how they are affected by local policy. (1.5.2b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of local community members and leaders participating in programs on the potential benefits of community-based agriculture and opportunities for promoting same. (1.5.2c)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth participating in education programs on the agriculture and food system and/or natural resource enterprises. (1.5.3a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of adults participating in education programs on the agriculture and food system and/or natural resource enterprises. (1.5.3b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007	Target:	10
2008	Target:	10
2009	Target:	10
2010	Target:	10
2011	Target:	10

**Output Text**

# refereed publications directed to this program

2007	Target:	20
2008	Target:	20
2009	Target:	20
2010	Target:	20
2011	Target:	20

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of agriculture/horticulture/natural resource business persons demonstrating knowledge or skill gains related to potential environmental, health, social, and cultural impacts of their operations from the perspective of the community. (1.5.1b)

**Outcome Type:** Short

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Outcome Text**

# of community members demonstrating knowledge or skill gains related to the roles of agriculture/horticulture/natural resource enterprises in the local community, tax base, and environment. (1.5.2d)

**Outcome Type:** Short

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Outcome Text**

# of local leaders demonstrating knowledge or skill gains related to the roles of agriculture/horticulture/natural resource enterprises in the local community and how they are affected by local policy. (1.5.2e)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of local community members and leaders demonstrating knowledge or skill gains related to the potential benefits of community-based agriculture and opportunities for promoting same. (1.5.2f)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of youth demonstrating knowledge or skill gains related to the agriculture and food system and/or natural resource enterprises. (1.5.3c)

**Outcome Type:** Short

2007 Target: 5500  
2008 Target: 5500  
2009 Target: 5500  
2010 Target: 5500  
2011 Target: 5500

**Outcome Text**

# of adults demonstrating knowledge or skill gains related to the agriculture and food system and/or natural resource enterprises. (1.5.3d)

**Outcome Type:** Short

2007 Target: 2500  
2008 Target: 2500  
2009 Target: 2500  
2010 Target: 2500  
2011 Target: 2500

**Outcome Text**

# of instances in which producers/horticulture businesses/natural resource enterprises, residents and community leaders work together to address issues. (1.5.1c)

**Outcome Type:** Medium

2007 Target: 30  
2008 Target: 30  
2009 Target: 30  
2010 Target: 30  
2011 Target: 30

**Outcome Text**

# of communities that assess how current policies and infrastructures sustain or impede agriculture/ horticulture/natural resource enterprises (such as farmland protection or including such enterprises in economic development planning). (1.5.2g)

**Outcome Type:** Medium

2007 Target: 200  
2008 Target: 200  
2009 Target: 200  
2010 Target: 200  
2011 Target: 200

**Outcome Text**

# of communities that initiate specific plans to address agriculture/ horticulture/natural resource enterprise related issues or capitalize on new opportunities including community agriculture initiatives. (1.5.2h)

**Outcome Type:** Medium

2007 Target: 75  
2008 Target: 75  
2009 Target: 75  
2010 Target: 75  
2011 Target: 75

**Outcome Text**

# documented instances in which agriculture/community onlicts are resolved locally. (1.5.1d)

**Outcome Type:** Long

2007 Target: 20  
2008 Target: 20  
2009 Target: 20  
2010 Target: 20  
2011 Target: 20

**Outcome Text**

# communities documented to adopt, maintain, or expand policies supportive of appropriate agriculture/horticulture/ natural resource enterprise development and/or community agriculture. (1.5.2i)

**Outcome Type:** Long

2007 Target: 50  
2008 Target: 50  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**20. External factors which may affect outcomes**

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Changing populations and land use patterns directly influence the relationships between agriculture/horticulture/ natural resource enterprises and their neighbors and communities. Land use policies, regulations, public priorities, and current economic conditions frame the options available for enterprises and communities to deal with real or potential conflicts or capitalize on opportunities for community-based agriculture initiatives.

## 21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

### Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 2.1 Connecting People to the Land and Their Environment

## 2. Program knowledge areas

- 131 Alternative Uses of Land 100 %

## 3. Program existence

- Intermediate (One to five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

CCE, CUAES and NYSAES have a commitment to the people of New York to build self-capacity among citizens so they can solve problems, improve quality of life, and build strong and vibrant communities. Through integrated research and extension agendas, we can help develop effective and collaborative land use/natural resource management approaches and policies that enhance economic, environmental and social connections.

## 6. Situation and priorities

### Three basic premises:

- New York State has a diverse and dynamic landscape.
- Land use policies are among the most important concerns affecting New York State.
- There is a growing interest in communities' relationships with their land use base and natural resources.

There is a general awareness that low-density residential development threatens farmland and open space, raises public service costs and taxes, encourages people and wealth to leave central cities, creates serious traffic congestion, and degrades the environment and our quality of life. In response to these trends, public interest groups, citizens and government at all levels have begun to search for solutions for slowing sprawl, preserving open space, and rebuilding our town and village centers, as well as our cities and older suburbs. This has led to a growing movement, often referred to as "smart growth", which represents a serious attempt to reverse the direction of current land use patterns.

Cornell Cooperative Extension's Responsibility: CCE has a commitment to the people of New York to build self-capacity among citizens so they can solve problems, improve quality of life, and build strong and vibrant communities. CCE, through integrated research and extension agendas, can help develop effective and collaborative land use/natural resource management approaches and policies that enhance economic, environmental and social connections.

CCE's programming and work to promote active and representative participation toward enabling all community members to shape their collective future has both direct and indirect impacts on all of the principles named above. We engage community members in learning about and understanding community issues, and the various impacts associated with alternative courses of action. We work toward the long term sustainability and well being of communities through collaborations and partnerships and therefore are able to add to the "public value."

Building local capacity for governance, enhancing local economies, and investing in human capital by providing research-based knowledge, public issues education, and education and training in areas such as community development and environmental management have long been elements of programming within Cornell Cooperative Extension.

The focus here is on community sustainability and the general principles behind the terminology of smart growth, quality communities, sustainability and conservation. Those principles and concepts include: multifunctionality of landscapes; creating a range of housing opportunities and choices; creating walkable and bikable communities; fostering distinctive, attractive communities with a strong sense of place; preserving open space, farmland, natural beauty, and critical environmental areas and resources; protecting public health and quality of life through sound environmental management; strengthening and directing development toward existing communities; making development decisions predictable, fair, and cost-effective; and encouraging community and stakeholder collaboration in development decisions.



**7. Assumptions made for the Program**

The key assumption is that an increasing segment of the population is concerned about being connected in healthy ways to their place – their communities and landscapes; that citizens are concerned about the impacts of a variety of decisions on the environment and to quality of life issues; and that citizens want to pay attention to the connection between work, civic life, and residential patterns.

A second major assumption is that knowledge of the interactions of environmental resources, quality of life, and local economies will lead to a involved, proactive citizenry.

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

- Better utilization of community resources to improve and sustain quality of life.
- Increased local capacity for management and protection of local environmental resources.
- Community resolution of agricultural-environmental conflicts and other land use issues.
- Increased open space in preservation or protection programs (based on sound community values and effective planning).
- Diversified local economies.
- Strong community networks that link diverse sub-groups.
- Communities actively manage their environments protecting and enhancing financial, infrastructure, human, environmental, and social capitals.

**9. Scope of Program**

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other then formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	10.0	0.0	1.0	0.0
2008	10.0	0.0	1.0	0.0
2009	10.0	0.0	1.0	0.0
2010	10.0	0.0	1.0	0.0
2011	10.0	0.0	1.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Cornell Cooperative Extension faculty, extension and research associates and educators partner with community leaders and elected officials to promote educational strategies which lead to informed land use and natural resource decisions in the context of balanced long-term outcomes. Training, research and resources focus on a number of issues including land use education, land use impacts, rural-urban interface, farmland preservation, community based agricultural economic development, involving youth in community mapping, place based education, pedestrian friendly communities, affordable

housing, use of open spaces, leadership development and community decision-making, residential and community horticultural education, and integrated pest management. Yet another approach to connecting people to their environments is fostering locally relevant economic development that builds on local resources, including people, capital, access to markets and natural resources, in a way that strengthens community and environmental assets.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Targeted groups include local elected officials and engaged community citizens. There is interest in developing a land use education curriculum for general citizens.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	10000	75000	0	0
2008	10000	75000	0	0
2009	10000	75000	0	0
2010	10000	75000	0	0
2011	10000	75000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# of residents and community leaders participating in programs on community assets, citizen involvement, property rights, land use, conservation, interaction between environmental, economic, issues, quality of life issues. (2.1.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of non-credit instructional activities directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of non-credit instructional hours directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of funded applied research projects directed to this program.

2007 Target: 1  
2008 Target: 1  
2009 Target: 1  
2010 Target: 1  
2011 Target: 1

**Output Text**

# refereed publications directed to this program

2007 Target: 20  
2008 Target: 20  
2009 Target: 20  
2010 Target: 20  
2011 Target: 20

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of residents and/or community leaders demonstrating knowledge or skill gains related to community assets, property rights, land use, environmental conservation, interaction between environmental, economic issues, quality of life indicators.  
(2.1.1b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of community leaders documented to apply community economic development and quality of life indicators to support decision-making. (2.1.1c)

**Outcome Type:** Medium

2007 Target: 4500  
2008 Target: 4500  
2009 Target: 4500  
2010 Target: 4500  
2011 Target: 4500

**Outcome Text**

# of communities implementing projects that protect public health through sound environmental management. (2.1.1e)

**Outcome Type:** Long

2007 Target: 75  
2008 Target: 75  
2009 Target: 75  
2010 Target: 75  
2011 Target: 75

**Outcome Text**

# of municipalities adopting land use planning tools that incorporate environmental dimensions and/or develop new institutional arrangements to support land use planning and environmental management. (2.1.2a)

**Outcome Type:** Medium

2007 Target: 250  
2008 Target: 250  
2009 Target: 250  
2010 Target: 250  
2011 Target: 250

**Outcome Text**

# of communities adopting or updating farmland preservation and/or agricultural economic development plans. (2.1.1b)

**Outcome Type:** Medium

2007 Target: 75  
2008 Target: 75  
2009 Target: 75  
2010 Target: 75  
2011 Target: 75

**Outcome Text**

Increase in number of organizations and number of public/private partnerships with educational focus on environmental conservation (land, water, other natural resources). (2.1.2c)

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of communities that plan for development directed toward existing communities re broader range of housing types including affordable housing, focus on bikable and walkable communities, and/or a variety of transportation choices. (2.1.3a)

**Outcome Type:** Medium

2007 Target: 50  
2008 Target: 50  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

# of communities that have taken steps to foster a sense of place. (2.1.3b)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# instances in which communities are documented to have resolved agricultural-environmental conflicts and/or other land use/natural resource issues at least in part due to participation in the program. (2.1.1d)

**Outcome Type:** Long

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# documented initiatives to increase public health and community well-being that take into account connections between work, civic life and residential patterns. (2.1.1f)

**Outcome Type:** Long

2007 Target: 35  
2008 Target: 35  
2009 Target: 35  
2010 Target: 35  
2011 Target: 35

**Outcome Text**

# of additional acres covered by open space preservation, environmental conservation and/or protection programs attributable at least in part to participation in the program. (2.1.2d)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Increase in percentage of food produced locally and regionally that is consumed locally or regionally. (2.1.2e)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of instances in which communities institute changes leading to one of following: development directed toward existing communities, range of housing types, more bikable and/or walkable community, variety of transportation choices. (2.1.3c)

**Outcome Type:** Long

2007 Target: 50  
2008 Target: 50  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

# of new or enhanced community organizations or networks linking diverse sub-groups and focused on enhancing community sustainability. (2.1.3d)

**Outcome Type:** Long

2007 Target: 35  
2008 Target: 35  
2009 Target: 35  
2010 Target: 35  
2011 Target: 35

**Outcome Text**

# of communities demonstrating greater balance of population across the age spectrum. (2.1.3e)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of communities marketing what is distinct and unique about themselves. (2.1.3f)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# communities/regions adopting buy local campaigns. (2.1.3g)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**20. External factors which may affect outcomes**

- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Communities operate in a complex and volatile context involving susceptibility to weather extremes, changing governmental policies and regulations, land uses demands and shifting development patterns, evolving consumer demands, and globalization related economic factors. Fundamental change is occurring in the state and regional economies. The specific implications of these external factors vary greatly by locale and across regions.

**21. Evaluation studies planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

**Description**

Researchers attempt to measure impacts by long-term monitoring and by establishing control and treatment situations in their experiments. For some work that is done in environmental issues, for example, we have some data that indicates that certain practices protect or improve environmental quality in certain places under conditions. One of the problems is that responses to actions can be very long term (improvements in water quality, for example) and we don't always have the ability to wait until we can measure the impacts. So we generalize specific results and assume that we can use those practices everywhere. Or we learn that there are intermediate indicators of improvement and we use those instead of measuring the final impact that we are hoping to achieve.

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

In addition to these routine documentation and assessment measures, targeted studies are planned in the areas of residential preferences and sprawl, and land use patterns that contribute to stormwater run-off. Further survey work is expected on citizens' attitudes to land use changes as well as survey work targeted at municipal planning board members and whether they have the training, resources and tools they need to make wise land use decisions.

## **22. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

### **Description**

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories". We are introducing use of "The Most Significant Change Technique" (Davies and Dart, 20005) to systematize and improve the rigor of success story collection.



**1. Name of the Planned Program****2.2 Strengthening Community Economic Development****2. Program knowledge areas**

- 805 Community Institutions, Health, and Social Services 25 %
- 903 Communication, Education, and Information Delivery 35 %
- 608 Community Resource Planning and Development 40 %

**3. Program existence**

- Mature (More than five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Changes in the economy have left many of New York's cities, towns, and villages in a state of decline, but those same communities can work toward being vital, engaging and attractive by building on their strengths and by educating community members on skills and approaches to address their challenges. There is an educational and networking role based on research that offers models and frameworks. For example, the "layer cake" model offers a total development paradigm that embeds economic development within community development and highlights the following layers: human infrastructure, support infrastructure, physical infrastructure and the economic base. There is an emerging framework being adopted nationally with the Cooperative Extension system called the community capitals approach. Research indicates that communities that invest in all seven capitals fare better than those that focus on two or three capitals and have greater success at achieving social equity, a vital economy, and a healthy ecosystem. The capitals are: financial, political, social, human, cultural, natural and built.

Many local government partners look to Cornell local government programming for perspective and policy knowledge that is supplemented with applied research. Our work has focused on conducting applied research and developing/facilitating approaches for local governments to address public sector problems. Our educational activities are an extension of this applied research and development. Subject matter specialization has focused on what some term the common denominator or crosscutting aspects of local government, like financial policy and management, decision-making processes, local government structure and organization and intergovernmental relations. This focus has led inevitably to the fiscal analysis of particular services and intergovernmental service delivery. University resources in agriculture, environment, and land use have led to focus on local land-use planning and some other areas of local government environmental management. Current applied research emphases include public notification requirements, intermunicipal tax policy, agricultural and land use conflicts, rural sprawl, and sustainability issues.

**6. Situation and priorities**

There are a multitude of challenges facing communities in New York State – and the nation as well – which result in strong need and priority for our educational programming:

- Loss of traditional economic base and current economic slowdown
- Intense competition for service employment
- Flat tax revenues in the face of increasing local government costs
- Unplanned sprawl threatening municipal tax base and family farms
- Changing face of agriculture
- Increasing residential segregation
- Weakening of traditional community based organizations & decreased civic involvement

A broad range of cooperating providers serve local government officials in New York State. Cornell professionals have been working with these groups for over 50 years and continue to coordinate with their efforts. The network of organizations includes: other SUNY units and community colleges, county extension associations, statewide municipal associations, regional and county associations of local officials, regional planning and technical assistance organizations, and state agencies. Much of the focus of this network of organizations is directed at helping local governments adapt to their state and federal regulatory and fiscal environment. Given the array of forces facing local officials, it not surprising that they would be responsive to assistance that helps assure that they can meet current regulations and stay out of trouble. In contrast, many local government partners look to Cornell local government programming for perspective and policy knowledge that is supplemented with applied

research.

In general Cornell local government programming has focused on smaller and more rural local governments, working to understand the particular needs and interests of small governments and networks of smaller government organizations in rural areas. These governments face unique challenges in terms of resources, staffing, gathering community feedback, administration, regulatory compliance, etc. On the other hand they constitute over three quarters of the states local government units and have responsibility to manage the preponderance of the state's land, water, forest and other natural resources.

### **7. Assumptions made for the Program**

The foundation for working with communities points to the following commonalities of successful communities: a well articulated vision; looks for opportunities; risk taking; holistic perspective; a belief in "doing"; find ways for ALL to participate; develop PEOPLE first; builds upon community resources; nothings succeeds like success; good use of knowledge; and trust.

Local governments in NYS have access to numerous sources of technical assistance for dealing with their fiscal and regulatory environments but lack assistance that requires a base of applied research and identifies policy alternatives. By partnering with local governments in conducting applied research and developing policy strategy, we can enhance capacity of local governments to address public sector problems.

Local government is an audience or key institution for many faculty that work in other substantive areas. This would include: natural resources, communications, etc. Our approach needs to provide the necessary resources to help the work of these faculty both in the substantive issues of local government and in providing outreach to the municipal audience.

Local Government and governance extension and applied research is a highly interdisciplinary area of work involving: economics, evaluation, demography, social organization, public administration, human resources, and a variety of other fields of study.

The institutional capacity and needs of New York's smaller and rural local governments are far different than is often defined by larger municipal and state government organizations. These smaller organizations are the majority of New York's local governments and addressing their unique needs is an important dimension in our applied research and extension work.

Success in capacity building for local governments begins with the current practices of local governments and the skills and understandings of local officials and staff. Significant or meaningful organizational change is difficult and slow.

Management Capacity: When a number of communities have a common goal, but each is unable to pursue it separately, collaboration may be a possible solution. Collaboration provides a critical mass of resources or helps access needed resources.

Governance Capacity: New perspectives gained through interaction with officials of other local governments often helps all concerned see new alternatives for action. Local governments experience a "boundary problem" when each community operating alone can not see the problem nor identify what needs to be done because the problem has a multi-jurisdictional nature.

### **8. Ultimate goal(s) of this Program**

Leaders are faced with the task of improving the community and economic vitality of their communities and finding viable options for community sustainability in a changing world. An increasing number of citizens and communities are seeking environmental health, quality of life, and a sense of community. Community goals can be articulated as: high quality of life; social cohesion; ecological integrity; effective decision making; and new economic opportunities.

### **9. Scope of Program**

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	13.6	0.0	5.0	0.0
2008	13.6	0.0	5.0	0.0
2009	13.6	0.0	5.0	0.0
2010	13.6	0.0	5.0	0.0
2011	13.6	0.0	5.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

Cornell Cooperative Extension Associations are uniquely positioned to provide unbiased assistance and education to communities in order for them to pursue their goals. Educators can provide the kind of initial facilitation and organizational skills necessary for successful visioning and action planning processes thereby assisting communities to improve or enhance their quality of life. Specific approaches for which we have resources: main street revitalization; community based entrepreneurial development; and strategic planning and visioning; technology-led economic development (via the EDA University Center).

Program staff work with a variety of state and local groups to tackle projects that that vary in nature from applied research to pilot projects or case studies. These activities, which are demand driven (locally or regionally initiated usually with sponsored or self-financing), provide valuable insights, resources and materials for extension education. This project work also provides innovative local government practitioners, professionals who work with local governments, and practitioner-professionals all of whom serve as a resource for our training and educational outreach. A variety of Cornell faculty, instructors and other professionals also serve as instructors, provide existing written and web resources and help develop needed resources for local government extension education. We utilize a number of strategies in conducting local government education.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

The educational approach to community and economic renewal suggest multiple audiences and stakeholders working in a partnership mode (elected officials, community leaders, business leaders, not-for-profit agencies, youth serving agencies, schools, environmental groups, agribusiness leaders, etc.).

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	15000	0	50000	0
2008	15000	0	50000	0
2009	15000	0	50000	0
2010	15000	0	50000	0
2011	15000	0	50000	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 12  
2008 Target: 12  
2009 Target: 12  
2010 Target: 12  
2011 Target: 12

**Output Text**

# of residents, community leaders, entrepreneurs, econ. devel. professionals participating in programs re: workforce, entrepreneurial climate, diversification, economic impact analysis, e-commerce, market devel., business planning, partnerships. (2.2.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of community members participating in educational programs related to community decision-making, public participation, planning and monitoring processes, and collaborative approaches. (2.2.3a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of economic developers and/or entrepreneurs participating in educational programs on "green" business opportunities. (2.2.4a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publications directed to this program

2007 Target: 80  
2008 Target: 80  
2009 Target: 80  
2010 Target: 80  
2011 Target: 80

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of residents, community leaders, entrepreneurs, econ. devel. professionals demon. knowledge/skill gains re: workforce, entrepreneurial climate, diversification, econ. impact analysis, e-commerce, market devel., business planning, partnerships. (2.2.1b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of community members demonstrating knowledge or skills gains related to community decision-making, public participation, planning and monitoring processes, collaborative approaches, and/or emergency preparedness. (2.2.3b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of economic developers and/or entrepreneurs demonstrating knowledge gains related to "green" business opportunities. (2.2.4b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of communities who plan for and implement initiatives re community based agric. econ. devel., main street revitalization, workforce development, business devel. and assistance, non-profit sector devel. and/or other elements of sustainable growth. (2.2.1c)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# of businesses initiated, retained, or expanded in a sustainable manner based on individual and community goals. (2.2.1a)

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of employers establishing or contributing to community-based workforce development approaches. (2.2.2a)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# of communities instituting new or enhanced participatory processes related to economic development. (2.2.3c)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# of communities developing vision statements and strategic plans and implement steps toward achieving their plans. (2.2.3d)

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of collaborative partnerships established within and across communities for issue resolution and collective action and/or to improve community services. (2.2.3e)

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of new "green" businesses established at least in part due to participation in the program. (2.2.4c)

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of communities establishing an infrastructure and climate to support entrepreneurs, local farms and agribusinesses attributable at least in part to initiatives of the program. (2.2.1e)

**Outcome Type:** Long

2007 Target: 25  
2008 Target: 25  
2009 Target: 25  
2010 Target: 25  
2011 Target: 25

**Outcome Text**

# of communities reporting that their local economies are increasingly diverse and developing in a sustainable manner attributable at least in part to participating in the program. (2.2.1f)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of employers reporting enhanced workforce availability attributable at least in part to participation in the program. (2.2.2b)

**Outcome Type:** Long

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# of communities reporting increased retention or return of youth in their communities due to meaningful employment opportunities attributable at least in part to initiatives of the program. (2.2.2c)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of documented instances in which a community effectively resolves a need or strengthens community assets attributable at least in part to participation in the program. (2.2.3f)



**Outcome Type:** Long

2007 Target: 75  
 2008 Target: 75  
 2009 Target: 75  
 2010 Target: 75  
 2011 Target: 75

**Outcome Text**

# of communities that report increased diversification of their local economies attributable at least in part to participation in the program. (2.2.4d)

**Outcome Type:** Long

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**20. External factors which may affect outcomes**

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

**Description**

Weather related disasters can greatly impact communities in terms of infrastructure damage and direct costs. The global, statewide, and regional economies directly impact local economies. Changing federal and state policies and changing availability of external funding enhance or impede the ability of local communities to determine their own futures.

**21. Evaluation studies planned**

- After Only (post program)
- Retrospective (post program)
- During (during program)
- Case Study

**Description**

Researchers attempt to measure impacts by long-term monitoring and by establishing control and treatment situations in their experiments. For some work that is done in environmental issues, for example, we have some data that indicates that certain practices protect or improve environmental quality in certain places under conditions. One of the problems is that responses to actions can be very long term (improvements in water quality, for example) and we don't always have the ability to wait until we can measure the impacts. So we generalize specific results and assume that we can use those practices everywhere. Or we learn that there are intermediate indicators of improvement and we use those instead of measuring the final impact that we are hoping to achieve.

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

In addition to these routine documentation and assessment measures, there will be a research effort to identify patterns of success among downtown shopping districts (Warren Brown, CISER). Within the Rural Visioning Project there will be an evaluation component that will address current rural programs and policies.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 3.1 Nutrition, Food Safety and Health

## 2. Program knowledge areas

- 501 New and Improved Food Processing Technologies 16 %
- 502 Nutrient Composition of Food 18 %
- 712 Healthy Lifestyle 14 %
- 711 Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources 7 %
- 723 Hazards to Human Health and Safety 7 %
- 703 Nutrition Education and Behavior 4 %
- 702 Requirements and Function of Nutrients and Other Food Components 2 %
- 701 Nutrient Composition of Food 2 %
- 722 Zoonotic Diseases and Parasites Affecting Humans 7 %
- 503 Quality Maintenance in Storing and Marketing Food Products 23 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

A healthy, well-nourished population depends on well informed consumers making wise health choices supported by strong research and education programs in human nutrition, food systems and food safety. The Cooperative State Research, Education, and Extension Service (CSREES), in partnership with Cooperative Extension, delivers community-based nutrition education programs that help individuals, families, and communities make informed choices about food and lifestyles that support their health along with their economic and social well-being. Nutrition and health programs within CCE are designed to 1) connect research and practice, 2) result in behavior change, 3) build on the strengths of families and youth, and 4) develop strong collaborations resulting in community changes for optimal health promotion and provide policymakers with the knowledge to develop appropriate policies for citizens.

## 6. Situation and priorities

Overweight and obesity have reached epidemic proportions in the United States. An estimated 34 percent of U.S. adults, 20-74 years of age, were overweight in 1999-2000, with an additional 31 percent being obese. The Centers for Disease Control and Prevention (CDC) estimates that 40 percent of adults (69 million) will be obese by 2010 if trends go unchanged. Obesity is positively correlated with increased risk of chronic diseases such as cardiovascular disease, diabetes, stroke, hypertension, osteoporosis, and some forms of cancer. Type 2 diabetes, once only found in adults, is now more frequently showing up in children, even pre-adolescent children.

The prevalence of chronic diseases in general is higher in low-income populations and this is exacerbated by increased obesity. Approximately 14 percent of New Yorkers, including 17 percent of children, live below the federal poverty level. Higher rates of obesity have been associated with factors that may discourage walking or healthy eating, such as urban sprawl; living on a highway and/or having no sidewalks, paths, or shops within walking distance; and questionable neighborhood safety. It has also been associated with neighborhood deprivation. Low income is also associated with hunger and food insecurity as well as a myriad of additional health problems including poor pregnancy outcome, infant mortality, anemia, and growth retardation. Food insecurity and obesity or overweight can exist at the same time in a household. With an emphasis on this audience, CCE nutrition and health programs enable participants to improve the diet, health, and well-being of themselves, their families, and their communities. Program goals focus on food resource management, nutrition knowledge, food preparation and promoting breastfeeding.

While consumers report that they are more knowledgeable about and have improved their food safety practices, in reality, some are still unknowingly practicing some unsafe behaviors. The Center for Disease Control estimates that 76 million people get sick, more than 300,000 are hospitalized, and 5,000 Americans die each year from foodborne illness. Preventing foodborne

illness and death remains a major public health challenge. Food thermometer use, safely handling leftovers, safely defrosting meat and poultry, immediately discarding food that may be unsafe and hand washing are important practices in preventing illness along with avoiding food cross-contamination. Experts have ranked behaviors for the reduction of the risk of illness caused by major foodborne pathogens; this information can enable consumers to make informed choices about food consumption and handling behaviors and can guide food safety educators in prioritizing their educational efforts.

A variety of good agricultural and manufacturing practices can reduce the spread of microbes among animals and prevent the contamination of foods. Careful review of the whole food production process can identify the principal hazards, and the control points where contamination can be prevented, limited, or eliminated. A formal method for evaluating the control of risk in foods exists is called the Hazard Analysis Critical Control Point, or HACCP system. HACCP safety principles are now being applied to an increasing spectrum of foods, including meat, poultry, and seafood and are incorporated in education with targeted food production audiences.

#### **7. Assumptions made for the Program**

The CSREES National Research Initiative on human nutrition and obesity addresses critical factors related to obesity prevention so that resulting knowledge can be applied to the development and evaluation of effective interventions. Likewise, in New York State, research on the etiology of obesity and chronic disease is applied by Cornell Cooperative Extension (CCE) to locally based nutrition and wellness education developed in partnership with families, youth, health and wellness professionals, and other community-minded individuals and groups.

Cornell and other academic research is applied to CCE programs promoting secure and safe community food systems to guard against food insecurity and help ensure a safe food supply. Neighborhood and community resources complement federal, state, and local government support to implement this outreach.

#### **8. Ultimate goal(s) of this Program**

Better diets, more healthy food choices, and increased fitness and overall health including reduction of chronic disease among priority groups.

Improved food security, food-choice options, and food-handling practices throughout community food systems.

#### **9. Scope of Program**

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

#### **Inputs for the Program**

##### **10. Expending formula funds or state-matching funds**

- Yes

##### **11. Expending other than formula funds or state-matching funds**

- Yes

##### **12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	71.0	0.0	16.0	0.0
2008	71.0	0.0	16.0	0.0
2009	71.0	0.0	16.0	0.0
2010	71.0	0.0	16.0	0.0
2011	71.0	0.0	16.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a comprehensive, statewide educational program entailing multiple education methods depending on local context and need. Campus-based faculty and extension associates and county-based educators are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Audiences reached include: moderate and low income families; 4-H youth; nutrition, health, and family professionals; front-line family workers; food service and food production staff and their managers and directors; and government and agency leaders at the local, state, and federal level.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	55000	250000	20000	100000
2008	55000	250000	20000	100000
2009	55000	250000	20000	100000
2010	55000	250000	20000	100000
2011	55000	250000	20000	100000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	8
2008	8
2009	8
2010	8
2011	8

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 35  
 2008 Target: 35  
 2009 Target: 35  
 2010 Target: 35  
 2011 Target: 35

**Output Text**

# of children, youth, and adults completing education programs on: food, nutrition and health topics including attitudes about healthy eating, healthy food choices, selection of healthy foods, and preparation of healthy foods. (3.1.1a)

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# of children, youth, and adults completing education programs on: benefits of physical activity and physical activity recommendations for health, and, obesity prevention. (3.1.1b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of women and health care providers completing education programs addressing healthy weight gain during pregnancy and breastfeeding. (3.1.1c)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of community members completing educational programs on issues that influence food and health behavior and associated appropriate actions including obesity prevention programs and policy. (3.1.1d)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of children, youth, and adults completing education programs on: identifying food insecurity, obtaining food assistance, balancing available resources by planning food choices, and lack of sufficient quality food/ hunger. (3.1.2a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of policy makers participating in education programs on status of food security in their communities and possible actions to promote increased food security. (3.1.2b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of participants in programs on: reducing food safety and/or food borne risks and illnesses including recommended food purchase, storage, handling, and preparation practices. (3.1.3a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publications directed to this program

2007 Target: 290  
2008 Target: 290  
2009 Target: 290  
2010 Target: 290  
2011 Target: 290

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of program participants who demonstrate knowledge or skill gains related to food, nutrition and health topics including: attitudes about healthy eating, healthy food choices, selection of healthy foods, preparation of healthy foods. (3.1.1e)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of program participants who demonstrate knowledge or skill gains related to benefits of physical activity, physical activity recommendations for health and obesity prevention. (3.1.1f)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of program participants who demonstrate knowledge or skill gains related to healthy weight gain during pregnancy and breast feeding. (3.1.1g)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0



**Outcome Text**

# of program participants who demonstrate knowledge or skill gains related to issues that influence food and health behavior and associated appropriate public/community actions, programs, and policy. (3.1.1h)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of program participants who demonstrate knowledge or skill gains related to status of food security in their communities and possible actions to promote increased food security. (3.1.2c)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of program participants who know what to do related to food insecurity problems such as actions to obtain food assistance, balance available resources by planning food choices, and lack sufficient quality food/hunger. (3.1.2d)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of program participants who demonstrate knowledge or skill gains related to reducing food safety and/or food borne risks and illnesses including recommended food purchase, storage, handling, and preparation practices. (3.1.3b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of program participants documented to have applied dietary and food safety recommendations daily in meals and snacks. (3.1.1i)

**Outcome Type:** Medium

2007 Target: 32000  
2008 Target: 32000  
2009 Target: 32000  
2010 Target: 32000  
2011 Target: 32000

**Outcome Text**

# of program participants documented to have increased activity levels. (3.1.1j)

**Outcome Type:** Medium

2007 Target: 18000

2008 Target: 18000

2009 Target: 18000

2010 Target: 18000

2011 Target: 18000

**Outcome Text**

# of program participants documented to have managed food budgets and related resources to meet family needs. (3.1.1k)

**Outcome Type:** Medium

2007 Target: 15000

2008 Target: 15000

2009 Target: 15000

2010 Target: 15000

2011 Target: 15000

**Outcome Text**

# of program participants documented to have increased participation in public/community health-related programs. (3.1.1.l)

**Outcome Type:** Medium

2007 Target: 1500

2008 Target: 1500

2009 Target: 1500

2010 Target: 1500

2011 Target: 1500

**Outcome Text**

# of program participants documented to have reduced one or more chronic disease indicators. (3.1.1m)

**Outcome Type:** Medium

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of participating communities documented to have made practice and policy changes to promote healthy food and fitness lifestyle choices. (3.1.1n)

**Outcome Type:** Medium

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of program participants who have acted to improve their food security status. (3.1.2e)

**Outcome Type:** Medium

2007 Target: 7500

2008 Target: 7500

2009 Target: 7500

2010 Target: 7500

2011 Target: 7500

**Outcome Text**

# of participating communities that assess food insecurity and develop appropriate action plans. (3.12f)

**Outcome Type:** Medium

2007 Target: 25

2008 Target: 25

2009 Target: 25

2010 Target: 25

2011 Target: 25

**Outcome Text**

# reported instances of changes made in school nutrition/wellness policies. (3.1.2g)

**Outcome Type:** Medium

2007 Target: 250

2008 Target: 250

2009 Target: 250

2010 Target: 250

2011 Target: 250

**Outcome Text**

# of household and food handler participants documented to have increased application of safe food preparation practices (storage, preparation, and serving, i.e, HACCP standards. (3.1.3c)

**Outcome Type:** Medium

2007 Target: 15000

2008 Target: 15000

2009 Target: 15000

2010 Target: 15000

2011 Target: 15000

**Outcome Text**

# of vulnerable children, youth and members of other priority groups documented to have reduced incidence of overweight and obesity as a result of participating in relevant educational programs. (3.1.1o)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of priority group members documented to have increased fitness levels as a result of participating in relevant educational programs. (3.1.1p)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of participating communities reporting decline in indicators of chronic diseases associated with obesity. (3.1.1q)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of individuals or households documented to have improved food security status. (3.1.2h)

**Outcome Type:** Long

2007 Target: 5200

2008 Target: 5200

2009 Target: 5200

2010 Target: 5200

2011 Target: 5200

**Outcome Text**

# of participating communities reporting declines in food insecurity indicators. (3.1.2i)

**Outcome Type:** Long

2007 Target: 150

2008 Target: 150

2009 Target: 150

2010 Target: 150

2011 Target: 150

**Outcome Text**

# of communities/firms/or organizations documented to have implemented improved practices or food safety policies as a result of participating in relevant educational programs. (3.1.3d)

**Outcome Type:** Long

2007 Target: 350

2008 Target: 350

2009 Target: 350

2010 Target: 350

2011 Target: 350

**Outcome Text**

# of participating communities reporting declines in food-related illness levels. (3.1.3e)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**20. External factors which may affect outcomes**

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

**Description**

The context within which the food system exists affects the quality and availability of nutritious and safe foods. Policy changes impact food production, can impact food safety and availability. Demographic shifts can translate into changing demands for foods that can impact nutritional status and the supply of nutritious and safe foods.

**21. Evaluation studies planned**

- After Only (post program)
- Retrospective (post program)
- During (during program)
- 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.

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use. We are currently looking at best practice models for breastfeeding, obesity prevention, FMNP delivery, and training of frontline staff. There are other locally generated projects as well.

**22. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Case Study
- Observation

**Description**

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including

required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories". We are introducing use of "The Most Significant Change Technique" (Davies and Dart, 20005) to systematize and improve the rigor of success story collection.

In addition, we will be using these focused approaches for programming in this area:

Evaluation Guide for Nutrition Education with Groups

Regional training for staff on writing success stories for required quarterly state reporting

ERS reporting system

**1. Name of the Planned Program****3.2 Parenting and Dependent Care****2. Program knowledge areas**

- 802 Human Development and Family Well-Being 100 %

**3. Program existence**

- Mature (More than five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Parenting and care giving practices, care programs and policies affect the quality of life for children, youth, elders and their families. CSREES provides resources and national leadership to the Land-Grant University System to conduct research, education, and extension programs that will improve parenting knowledge, skills and practices and increase the quantity and improve the quality of child care (early care and education), school-age care (after-school), teen out-of-school programs and elder care. Cornell Cooperative Extension parenting and dependent care programs are designed to integrate research with community education on parenting and care-giving practices, care-giving program quality principles and standards, and care-related policies. Included in these efforts are training opportunities for workers providing child and elder care and policy makers at the state and local levels.

**6. Situation and priorities**

Good parenting practices differ across several developmental stages of childhood, and include range of outcomes, some of which can be customized to meet special needs, address cultural differences and still be sensitive to the needs of particular family structures. Grandparents, other relatives and kin raising children face major changes and special challenges. Most professionals who serve these grandparents and kin need more information to better address emerging social and educational concerns.

More than 36 million Americans are already over 65 and many are struggling to care for elderly parents. Over the next 10 years the number of direct elder care jobs is projected to increase at a much higher rate than employment in the overall labor market. Elder care issues array across a spectrum of types of care and include in home, in the community and long term nursing care. Therefore, education addressing eldercare issues can be targeted to family members of elders, service workers, institutions, communities and policy-makers.

Young children of working parents are typically in the care of others for a major part of each working day; school-age children are in a variety of care situations including self-care while their parents work. Community needs assessments frequently point to the lack of quality school-age child care programs. Research indicates the quality of child care provided is directly related to the level of education and training of child care providers. There is a continuing need for education on what constitutes high quality child care to parents select and monitor their children's care, as well as for those providing care and for other stakeholders and decision-makers. The retention of child- and elder-care workers affects the quality and availability of care.

**7. Assumptions made for the Program**

Most parents and relative caregivers want to do they best they can for their children. Targeted parent populations will seek out and participate in parenting education if the programs are designed to address their immediate needs, are affordable, and are conveniently available. Parenting and child development knowledge and skills taught are applicable to many family situations and can improve parent-child interactions and child nurturance over time.

Child care quality can be improved through education. Registered child caregivers and programs will continue to be required to have continuing education by the state. New York family child-caregivers exempt from state registration requirements will also need assistance and seek opportunities to learn what can be applied to their chosen self-employment. Parents searching for child care will access child care quality information and educational programs once they know what to look for. Child care is recognized as a community and economic resource and opportunities to increase availability, access and affordability are one purpose of CCE programming in this area.

Elder care demand will continue to grow, preferences for a variety of care provision will build and result in continuing need for education with care givers, family members seeking elder care and research and education on retention of elder caregivers.

Cornell University and other academic research will build knowledge about effective parenting practices targeting different parent populations and quality child and elder care that can be applied to educational practice and policy development.

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

Improved parenting practices that result in better child and youth outcomes.  
 High quality, accessible and affordable child and elder care are available for those who seek it.  
 Improved parent/caregiving practices result in parents and caregivers reporting increased confidence in their roles.

**9. Scope of Program**

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	18.2	0.0	1.0	0.0
2008	18.2	0.0	1.0	0.0
2009	18.2	0.0	1.0	0.0
2010	18.2	0.0	1.0	0.0
2011	18.2	0.0	1.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a comprehensive, statewide educational program entailing multiple education methods depending on local context and need. Campus-based faculty and extension associates and county-based educators are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● Web sites</li> </ul>



**15. Description of targeted audience**

Key audiences served, directly and indirectly, include: parents, grandparents and other relative caregivers who are parenting children; child and elder care workers and their supervisors and program directors; community stakeholders such as employers, leaders and policy makers at the local and state levels.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	7500	100000	0	0
2008	7500	100000	0	0
2009	7500	100000	0	0
2010	7500	100000	0	0
2011	7500	100000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007	Target:	8
2008	Target:	8
2009	Target:	8
2010	Target:	8
2011	Target:	8

**Output Text**

# of care providers completing education programs on current standards and practices of high quality infant and child care programs. (3.2.1a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of parents, grandparents and other adults providing parental care completing education programs on developmentally appropriate and effective parenting methods. (3.2.3a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of community members completing educational programs on critical issues in family care. (3.2.4a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# refereed publications directed to this program

2007	Target:	10
2008	Target:	10
2009	Target:	10
2010	Target:	10
2011	Target:	10

## Outcomes for the Program

### 19. Outcome measures

#### Outcome Text: Awareness created

##### Outcome Text

# of program participants who demonstrate knowledge or skill gains related to infant and child care practices. (3.2.1b)

##### Outcome Type: Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

##### Outcome Text

# of participants who demonstrate ability to evaluate the quality of care programs to determine appropriate placement for their family members or others. (3.2.1c)

##### Outcome Type: Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

##### Outcome Text

# of program participants who increase knowledge of community infant, child care, and after school program needs. (3.2.2a)

##### Outcome Type: Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

##### Outcome Text

# of program participants who demonstrate knowledge or skill gains related to positive parenting practices. (3.2.3b)

##### Outcome Type: Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

##### Outcome Text

# of program participants who demonstrate knowledge or skill gains related to elder care practices. (3.2.4b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of adult program participants who demonstrate knowledge or skill gains related to elder care worker retention issues. (3.2.5a)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of program participants reporting to have applied good infant and child care practices. (3.2.1d)

**Outcome Type:** Medium

2007 Target: 2000  
2008 Target: 2000  
2009 Target: 2000  
2010 Target: 2000  
2011 Target: 2000

**Outcome Text**

# of program participants reporting to have used child care quality characteristics in their care selection. (3.2.1e)

**Outcome Type:** Medium

2007 Target: 4000  
2008 Target: 4000  
2009 Target: 4000  
2010 Target: 4000  
2011 Target: 4000

**Outcome Text**

# of program participants reporting to have been involved in community level assessments of infant, child care, of school age care program provision. (3.2.2b)

**Outcome Type:** Medium

2007 Target: 1000  
2008 Target: 1000  
2009 Target: 1000  
2010 Target: 1000  
2011 Target: 1000

**Outcome Text**

# of program participants reporting to have applied positive parenting practices. (3.2.3c)

**Outcome Type:** Medium

2007 Target: 7500  
2008 Target: 7500  
2009 Target: 7500  
2010 Target: 7500  
2011 Target: 7500

**Outcome Text**

# of program participants reporting to have applied good elder care practices. (3.2.4c)

**Outcome Type:** Medium

2007 Target: 3250  
2008 Target: 3250  
2009 Target: 3250  
2010 Target: 3250  
2011 Target: 3250

**Outcome Text**

# of program participants reporting to have used elder care quality characteristics in their care selection. (3.2.4d)

**Outcome Type:** Medium

2007 Target: 2800  
2008 Target: 2800  
2009 Target: 2800  
2010 Target: 2800  
2011 Target: 2800

**Outcome Text**

# of program participants reporting to have addressed issues related to elder care worker retention. (3.2.5b)

**Outcome Type:** Medium

2007 Target: 125  
2008 Target: 125  
2009 Target: 125  
2010 Target: 125  
2011 Target: 125

**Outcome Text**

# of child care providers, child care programs or parents reporting improved infant and child care as a result of participating in educational programs. (3.2.1f)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of communities documented to have taken action to address infant and/or child and school-age child care needs that can be related to educational programs and/or critical community collaborations provided. (3.2.2c)

**Outcome Type:** Long

2007 Target: 80  
2008 Target: 80  
2009 Target: 80  
2010 Target: 80  
2011 Target: 80

**Outcome Text**

# of parents/relative caregivers reporting to have experienced positive change in parent-child relationships and child nurturance that they attribute to implementing new parenting behaviors learned in educational programs. (3.2.3d)

**Outcome Type:** Long

2007 Target: 7000  
2008 Target: 7000  
2009 Target: 7000  
2010 Target: 7000  
2011 Target: 7000

**Outcome Text**

# of participating family members who reported improved elder care for their dependents as a result of participating in educational programs. (3.2.4e)

**Outcome Type:** Long

2007 Target: 1750  
2008 Target: 1750  
2009 Target: 1750  
2010 Target: 1750  
2011 Target: 1750

**Outcome Text**

# of elder-care facilities reporting improvement in elder care worker retention by facilities, services as a result of participating in educational programs. (3.2.5c)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**20. External factors which may affect outcomes**

- Economy
- Public Policy changes
- Government Regulations
- Competing Public priorities
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

The economic, political and governmental sectors affect the quality, availability and accessibility of child and elder care. An increasing elderly population results in increased demand for elder care services. The growth of minority populations in the US means more diverse cultures and values related to parenting, child and elder care.

## 21. Evaluation studies planned

- After Only (post program)
- During (during program)
- Other

### Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use. Control Study Group assessment of Relatives as Primary Parents [RAPP] in Orange, Ulster and Dutchess Counties.

## 22. Data Collection Methods

- Sampling
- Mail
- Telephone
- Structured
- Case Study

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 3.3 Family Financial Security and Management of Housing Resources

## 2. Program knowledge areas

- 804 Human Environmental Issues Concerning Apparel, Textiles, and Residential and Commercial Structures 25 %
- 801 Individual and Family Resource Management 25 %
- 607 Consumer Economics 50 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

This program will improve the household financial security of targeted New York populations through money management education and result in benefits to the economic vitality of communities as well. It will empower low and moderate-income households who are especially vulnerable to financial setbacks and have less disposable income to commit to savings. These populations lack access to financial advisors who target higher income individuals. It will assist low-income households who often live in poor-quality housing that has high levels of radon, carbon monoxide, lead, asbestos, and basement mold—adversely affecting residents. In addition, it will enhance older housing that is frequently less energy-efficient than new housing and inform households that have limited access to residential energy-efficient products and services. There are nearly 4 million low- and moderate-income individuals in a number of upstate New York State regions. By focusing on this group we will have a strong impact in a segment of the population that would benefit the most from improved skills in financial literacy, energy and air quality management. Limited and highly neighborhood-specific programming in New York City is a secondary potential priority.

## 6. Situation and priorities

Economic security, financial and other household resource management are educational priorities for Cornell Cooperative Extension in New York State.

Personal income levels in upstate New York increased at half the national rate during the 1990s thus putting a strain on household finances.

The unemployment rate for New York State in 2004 was 5.8%, down from 6.3% in 2003, but higher than the national rate of 5.53%

National 2004 data indicate households have financially insecure positions.

Forty-five percent of all workers had total household assets, excluding the home, of less than \$25,000.

The US personal savings rate was only 1 percent.

The average 2003 credit card debt in New York was \$5,184, higher than the national average of \$4,663.

## 7. Assumptions made for the Program

Low income and many moderate income households have limited or no access to financial advice and non-biased financial and other resource management information.

Financial and other resource management education leading to improved management practices will result in increased household disposable income and lessened financial set-backs.

Lower income households can institute practices that improve the indoor environmental quality of their residences.

Increased household disposable income and improved indoor environments will result in improved quality of life for individuals, more prosperous communities and overall improvement in the NYS economy.

## 8. Ultimate goal(s) of this Program

Improved financial status of targeted NYS residents.

Increased energy conservation and control of energy costs.

Improved indoor air quality in low income households resulting in better health outcome



**9. Scope of Program**

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	8.1	0.0	1.0	0.0
2008	8.1	0.0	1.0	0.0
2009	8.1	0.0	1.0	0.0
2010	8.1	0.0	1.0	0.0
2011	8.1	0.0	1.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a comprehensive, statewide educational program entailing multiple education methods depending on local context and need. Campus-based faculty and extension associates and county-based educators are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Low and moderate-income households who are especially vulnerable to financial setbacks and have less disposable income to commit to savings.

Low-income households living in poor-quality housing.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	15000	125000	5500	30000
2008	15000	125000	5500	30000
2009	15000	125000	5500	30000
2010	15000	125000	5500	30000
2011	15000	125000	5500	30000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 3  
2008 Target: 3  
2009 Target: 3  
2010 Target: 3  
2011 Target: 3

**Output Text**

# of persons completing education programs on age-appropriate topics like spending and saving concepts, appropriate use of money, financial goals, tracking expenses, budgeting, credit management, financial planning, and wealth generation strategies. (3.3.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of consumers and property managers completing programs on indoor air quality issues. (3.3.2a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

#refereed publications directed to this program.

2007 Target: 10  
2008 Target: 10  
2009 Target: 10  
2010 Target: 10  
2011 Target: 10

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# participants who demonstrate knowledge or skill gains related to spending and saving concepts, appropriate use of money, setting financial goals, tracking expenses, budgeting, credit management, financial planning, and wealth generation strategies. (3.3.1b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of consumers and property managers gaining awareness and knowledge of indoor air quality issues and remediation options. (3.3.2b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of program participants documented to have reduced debts and/or increased savings. (3.3.1c)

**Outcome Type:** Medium

2007 Target: 7000

2008 Target: 7000

2009 Target: 7000

2010 Target: 7000

2011 Target: 7000

**Outcome Text**

# of program participants documented to have used standard practices such as timely bill payment to meet financial life planning goals. (3.3.1d)

**Outcome Type:** Medium

2007 Target: 6000

2008 Target: 6000

2009 Target: 6000

2010 Target: 6000

2011 Target: 6000

**Outcome Text**

# of program participants documented to have taken measures to prevent or remediate indoor air quality issues. (3.3.2c)

**Outcome Type:** Medium

2007 Target: 6200

2008 Target: 6200

2009 Target: 6200

2010 Target: 6200

2011 Target: 6200

**Outcome Text**

# of program participants documented to have reduced short-term health effects of indoor air pollutants (such as irritation of the eyes, nose, and throat, headaches, dizziness, and fatigue) as a result of participating in educational programs. (3.3.2d)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of program participants reporting to have met day-to-day financial obligations while also progressing on future goals for savings, retirement accounts, etc. (3.3.1e)

**Outcome Type:** Long

2007 Target: 6500  
2008 Target: 6500  
2009 Target: 6500  
2010 Target: 6500  
2011 Target: 6500

**Outcome Text**

# of participants reducing risks of respiratory diseases, heart disease, and cancer by impl. measures such as radon remediation, controlling indoor triggers of asthma: secondhand smoke, dust mites, pet dander, and pests. (3.3.2e)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**20. External factors which may affect outcomes**

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

**Description**

Natural disasters and the economy affect household financial status and impact energy issues. They also affect the quality of the indoor air environment. Government regulation and policies driven by public priorities can change the circumstances of personal finances, the energy market and the quality of the indoor household environment. Public and private funders and CCE may have fewer fiscal resources and other resources to devote to the quality of life in financial, energy and indoor air quality matters.

**21. Evaluation studies planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Case Study

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 4.1 Natural Resource Management

## 2. Program knowledge areas

- 123 Management and Sustainability of Forest Resources 5 %
- 102 Soil, Plant, Water, Nutrient Relationships 50 %
- 101 Appraisal of Soil Resources 7 %
- 134 Outdoor Recreation 5 %
- 132 Weather and Climate 2 %
- 104 Protect Soil from Harmful Effects of Natural Elements 4 %
- 214 Vertebrates, Mollusks, and Other Pests Affecting Plants 5 %
- 124 Urban Forestry 6 %
- 135 Aquatic and Terrestrial Wildlife 11 %
- 125 Agroforestry 5 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

The Natural Resource Management Program is a multi-audience effort addressing agricultural and natural resource producers, community decision makers, businesses, organizations, and individual consumers. Sustainability of natural resources, enhancement of biodiversity and habitat, and natural resources management for economic vitality is critical to residents of New York State, who enjoy and rely on abundant, healthy, and diverse natural resources. Continuing applied research and education on natural resources management, including inventory and mapping methods; habitat; biodiversity; alternative land uses; and economics of sustainable natural resources, a viable local economy, and a healthy environment are critical to protecting, enhancing, and sustaining valuable natural resources.

## 6. Situation and priorities

With natural resources including forested mountains; aquatic environments from wetlands and marshes to estuaries to lakes; and an accompanying diversity of plant and animal species, New York residents rely on these resources for recreation, tourism, raw products such as timber and fish, and related businesses. Agricultural and natural resource producers, community decision makers, businesses, organizations, and individual consumers need current information on good management practices, alternative land uses, protection of open space, and development of environmentally-sustainable natural resource-based businesses. Communities need education targeted to their specific concerns, including the interaction of natural resources, the environment, and the economy.

## 7. Assumptions made for the Program

Producers, local government, individuals, organizations, and businesses often are not fully aware of potential environmental impacts of their operations and/or requirements and opportunities of environmental regulations and programs.

Technical assistance providers relied upon by producers, local government, individuals, organizations, and businesses have parallel needs for current information on appropriate production practices.

Knowledge of the interactions of environmental resources, public health, quality of life, and local economies will lead to an involved, proactive citizenry.

It is possible to simultaneously meet economic and environmental sustainability goals; a sustainable, healthy economy depends on a healthy environment.

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

Improved natural resources management efforts will result in enhanced and protected natural resources for multiple uses, including agroforestry, fishing, recreation, agriculture, recreation, tourism, and other businesses/industry.

The economic vitality of agricultural/natural resources and other businesses is improved, the health of individuals and families are enhanced, and local government operations are made more sustainable through the availability of high quality natural resources.

**9. Scope of Program**

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	9.9	0.0	6.0	0.0
2008	9.9	0.0	6.0	0.0
2009	9.9	0.0	6.0	0.0
2010	9.9	0.0	6.0	0.0
2011	9.9	0.0	6.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a statewide educational program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>



**15. Description of targeted audience**

Residents and property owners are targeted with stewardship and natural resources protection for their properties. Businesses, organizations, and producers are targeted with information improved management practices and alternative land uses, such as agroforestry. Local government and community leaders are targeted with information related to governmental management of natural resources, such as land use planning and open space preservation. Environmental planners and managers and technical assistance providers, such as foresters, are targeted with in-depth information related to their audiences/constituents.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	12000	100000	25000	35000
2008	12000	100000	25000	35000
2009	12000	100000	25000	35000
2010	12000	100000	25000	35000
2011	12000	100000	25000	35000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	2
2008	2
2009	2
2010	2
2011	2

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007	Target:	25
2008	Target:	25
2009	Target:	25
2010	Target:	25
2011	Target:	25

**Output Text**

# of agricultural/natural resources producers and business representatives completing educational programs on managing natural resources and/or biodiversity. (4.1.1a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of organization and business representatives completing educational programs on managing natural resources and/or biodiversity. (4.1.2a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of local government officials and community leaders completing educational programs on managing natural resources, open space preservation, alternative land uses and/or biodiversity. (4.1.3a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of consumers, residents, and landowners completing educational programs on natural resources protection and/or biodiversity. (4.1.4a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# of teachers and youth professionals and volunteers completing educational programs on natural resources protection and/or biodiversity. (4.1.5a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth completing educational programs on natural resources protection and/or biodiversity. (4.1.6a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publications directed to this program.

2007 Target: 290  
2008 Target: 290  
2009 Target: 290  
2010 Target: 290  
2011 Target: 290

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of agricultural/natural resources producers and business representatives who demonstrate knowledge gains about managing natural resources and/or biodiversity. (4.1.1b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of organization and business representatives who demonstrate knowledge gains about managing natural resources and/or biodiversity. (4.1.2b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of local government officials and community leaders who demonstrate knowledge gains about managing natural resources, open space preservation, alternative land uses and/or biodiversity. (4.1.3b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of consumers, residents, and landowners who demonstrate knowledge gains about natural resources management and/or biodiversity. (4.1.4b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of teachers and youth professionals and volunteers who demonstrate knowledge gains about natural resources management and/or biodiversity. (4.1.5b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of youth who demonstrate knowledge gains about natural resources management and/or biodiversity. (4.1.6b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of agricultural/natural resources producers and business representatives documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance natural resources and/or enhance biodiversity. (4.1.1c)

**Outcome Type:** Medium

2007 Target: 2000

2008 Target: 2000

2009 Target: 2000

2010 Target: 2000

2011 Target: 2000

**Outcome Text**

# of organization and business representatives documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance natural resources and/or enhance biodiversity. (4.1.2c)

**Outcome Type:** Medium

2007 Target: 200

2008 Target: 200

2009 Target: 200

2010 Target: 200

2011 Target: 200

**Outcome Text**

# of local government officials and community leaders documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance natural resources and/or enhance biodiversity. (4.1.3c)

**Outcome Type:** Medium

2007 Target: 200

2008 Target: 200

2009 Target: 200

2010 Target: 200

2011 Target: 200

**Outcome Text**

# of communities documented to have thoroughly assessed the status of their natural resources. (4.1.3d)

**Outcome Type:** Medium

2007 Target: 50

2008 Target: 50

2009 Target: 50

2010 Target: 50

2011 Target: 50

**Outcome Text**

# of producers, businesses, local governments, organizations, landowners, and individuals collaborate to develop and implement natural resources management strategies. (4.1.3e)

**Outcome Type:** Medium

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of consumers, residents, and landowners documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance natural resources and/or enhance biodiversity. (4.1.4c)

**Outcome Type:** Medium

2007 Target: 3500

2008 Target: 3500

2009 Target: 3500

2010 Target: 3500

2011 Target: 3500

**Outcome Text**

# of teachers and youth professionals and volunteers who incorporate natural resources management and/or biodiversity knowledge into curriculum. (4.1.5c)

**Outcome Type:** Medium

2007 Target: 750

2008 Target: 750

2009 Target: 750

2010 Target: 750

2011 Target: 750

**Outcome Text**

# of youth documented to have modified existing practices and/or adopted new practices to protect/enhance natural resources and/or enhance biodiversity. (4.1.6c)

**Outcome Type:** Medium

2007 Target: 1250

2008 Target: 1250

2009 Target: 1250

2010 Target: 1250

2011 Target: 1250

**Outcome Text**

# of youth introduced to variety of environmental and natural resources career options. (4.1.6d)

**Outcome Type:** Medium

2007 Target: 20000

2008 Target: 20000

2009 Target: 20000

2010 Target: 20000

2011 Target: 20000

**Outcome Text**

Documented instances in which impl. of natural resources mngmt. practices and/or land use policies lead to increased open space preservation, enhanced or protected natural resources, enhanced biodiversity, and/or incr. alternative land use. (4.1.3f)

**Outcome Type:** Long

2007 Target: 75

2008 Target: 75

2009 Target: 75

2010 Target: 75

2011 Target: 75

**Outcome Text**

Increased local economic activities attributable at least in part to enhanced natural resources management and/or increased alternative land uses. (4.1.3g)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

Documented instances in which implementation of natural resources management practices by individual consumers, residents, and/or private landowners lead to increased open space preservation, enhanced or protected natural resources, enhanced biodiversity. (4.1.4d)

**Outcome Type:** Long

2007 Target: 2500  
2008 Target: 2500  
2009 Target: 2500  
2010 Target: 2500  
2011 Target: 2500

**Outcome Text**

# of youth documented to have chosen natural resources-related careers. (4.1.6e)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Documented instances in which implementation of natural resources management practices by agricultural/natural resources producers or other business persons lead to increased open space preservation, enhanced/protected natural resources, biodiversity and/or land use. (4.1.1d)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations
- Competing Public priorities

**Description**

Natural disasters such as ice storms that damage large areas of forest can prompt action related to natural resources management. However, natural disasters can adversely affect the economy, limiting the ability to take action. Economic impacts of natural resources also can prompt action related to natural resources management, including willingness to spend money to make improvements. Appropriations, public policy, and regulations directly affect ability to pursue natural resources management practices.

Natural disasters such as floods and droughts can adversely affect the economy, limiting the ability to take action. Public health impacts of waste management can prompt action, including willingness to spend money to make improvements. Appropriations, public policy, and regulations directly affect ability to pursue waste management practices. Available markets for recycling and waste products can vary according to perceived risk factors.

Natural disasters such as floods and droughts can prompt action related to water resources management. However, natural disasters can adversely affect the economy, limiting the ability to take action. Public health impacts of water resources also can prompt action related to water resources management, including willingness to spend money to make improvements. Appropriations, public policy, and regulations directly affect ability to pursue water resources management practices.

## 21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- During (during program)
- Case Study

### Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.



## 1. Name of the Planned Program

### 5.1 Youth in Action

## 2. Program knowledge areas

- 806 Youth Development 100 %

## 3. Program existence

- Intermediate (One to five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

contributions to strengthen or enhance NY communities. These efforts have many different foci including preventing youth tobacco use, promoting youth employment, creating youth-friendly spaces, establishing healthy environments, and increasing community safety. Participating youth gain in six competency domains: cultural, personal, civic, political, cognitive, and social skills. Intended outcomes are that youth are respected as learners and teachers, that specific knowledge and skill gains are made, that youth gain positive attitudes about their ability to create desirable change, that participants aspire to continued civic and service activities, that lasting contributions are made to communities, and that adults and communities recognize youth as valued partners.

## 6. Situation and priorities

Purposeful action requires that we design learning experiences for youth to attain a voice; build youth/adult partnerships through staff and volunteer development, and actively engage youth in curriculum and program efforts.

In its broadest sense, YCA refers to the authentic and meaningful engagement of young people in programs, organizations, and communities, where they have or share voice, influence, and decision-making authority. Youth-adult partnerships are more than good youth development. Young people's fresh ideas, conviction and willingness to work hard make them ideal partners in community change and social justice initiatives. Real youth-adult partnerships require young people and adults to share both power and responsibility, to listen and really hear one another, and to set aside all the stereotypes that each group represents to the other.

The youth community action movement underscores the importance of young people being engaged in leadership and / or decision-making roles now, not only at some point in the future when they have reached 'adulthood'. Youth-adult partnerships, based on mutual respect and trust, unleash the potential of both young people and adults, and provide a powerful tool to create positive and lasting change for individuals, organizations, and communities.

"Imagine a world where young people are fully engaged in decision-making about the issues that affect them. What challenges might they identify? What solutions might they discover? What would our communities—and nation—look like if youth were a meaningful and vital part of the process? The underlying concept of Youth in Governance [Youth Community Action] regards young people as necessary, fully engaged participants in their communities. Rather than seeing young people as "future citizens" or "future leaders," Youth in Governance [YCA] regards youth as capable individuals who contribute in meaningful, authentic ways to the organizations and communities where they live, learn, work, and play. – Carole MacNeil, Ph.D. Statewide Director, 4-H Youth Development, University of California at Davis Youth in Governance, Youth in Action: A National 4-H Initiative for Systemic Change.

## 7. Assumptions made for the Program

Positive - Youth Community Action (YCA) empowers youth and adults by building life skills through experiential learning. YCA initiatives support 4-H Youth Development mission to create supportive learning environments in which diverse youth and adults reach their fullest potential as capable, competent and caring citizens.

Negative - People wrongly assumed that YCA was a new program. Adults held the misconception that educators need to be 'experts' or 'in control' of the program. Educators found it hard to 'visualize' YCA contexts.

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

Youth are community leaders making decisions and taking action on issues of public/community concern that impact their lives.

Diversity of community is reflected within and engaged as key stakeholders.

**9. Scope of Program**

- In-State Extension
- Multistate Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	12.8	0.0	0.0	0.0
2008	12.8	0.0	0.0	0.0
2009	12.8	0.0	0.0	0.0
2010	12.8	0.0	0.0	0.0
2011	12.8	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

A variety of educational strategies will be used to help county educators gain the skills and knowledge necessary to fully understand and differentiate between the range of possibilities that exist within the YCA initiative. As a result, youth development professionals will be able to identify what they are already doing well, notice if there are any gaps within their programs, and enhance existing programs. Provided with evaluation ‘tools’ they will be able to evaluate organizational readiness to embrace the YCA concept, and measure their success in working with groups

Guided trainings and successful implementation of the process at the county level will increase the numbers of Youth /Adult partnerships; will result in the development of strong community action initiatives, and ultimately policy changes within communities. Provided such a diverse range of educational strategies, educators will be able to select those methods that work best for them, and realize the benefits and value in establishing youth/adult partnerships.

County, District and Statewide workshops; news articles; web page trainings; spotlighting successful programs, and critical evaluation offer opportunities for skills development and sharing of work being done. Good evaluation data provides a powerful reporting mechanism that can be used to persuade members of the legislature to provide funding to county and state programs. It can also generate scholarly publications and reviews.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> </ul>	<ul style="list-style-type: none"> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Youth 5 – 21 years of age and adults.

Youth, 5- 19 year of age are the targeted 4-H / non 4-H youth audiences

19 – 21 year olds are college students who work well with younger youth and serve as mentors and role models. They will gain personally and professionally from YCA efforts.

Adults (21+), of any age, ethnicity, religion, etc. They choose to serve as guides for the process, and are a very important part of any youth/adult driven project.

Communities as whole: educating / informing youth and adults organizations, businesses, schools, and other institutions, to create the paradigm shift necessary to realize the value of youth and adults working together to build 'community'.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	750	4500	5000	45000
2008	750	4500	5000	45000
2009	750	4500	5000	45000
2010	750	4500	5000	45000
2011	750	4500	5000	45000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth participating in education programs leading to youth community action initiatives. (5.1.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth participating in train-the-trainer programs related to youth community action. (5.1.1b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of adults participating train-the-trainer programs related to youth community action. (5.1.1c)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of communities participating in youth community action initiatives. (5.1.1d)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publications directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of youth and adults demonstrating knowledge gains related to Youth/Adult Partnerships and Youth Community Action Initiatives. (5.1.1d)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of youth documented to have practiced life skills necessary to meet challenges of adolescence and adulthood in authentic decision-making partnerships with adults as a result of participating in the program. (5.1.1e)

**Outcome Type:** Medium

2007 Target: 4500  
2008 Target: 4500  
2009 Target: 4500  
2010 Target: 4500  
2011 Target: 4500

**Outcome Text**

# of adults documented to have knowledge, skills and abilities and behaviors necessary to assist youth developing into productive community members as a result of participating in the program. (5.1.1f)

**Outcome Type:** Medium

2007 Target: 650  
2008 Target: 650  
2009 Target: 650  
2010 Target: 650  
2011 Target: 650

**Outcome Text**

# of documented instances in which youth and adults partner to improve quality of life within a community as a result of participating in the program. (5.1.1g)

**Outcome Type:** Long

2007 Target: 500

2008 Target: 500

2009 Target: 500

2010 Target: 500

2011 Target: 500

**20. External factors which may affect outcomes**

- Competing Public priorities
- Competing Programmatic Challenges

**Description**

Moving individuals and systems to do things differently, is often difficult. The Youth in Action initiative requires a shift in how things are done. How do adults go from 'doing' for youth to 'working together to accomplish goals'. Often youth are the 'doers' and the 'receivers'. Youth are picking up the trash, collecting the food items; raking the leaves/ being told what to do and when. Youth may not believe that they are capable of doing anything more than what is asked of them. Many adults and youth have never learned how to work together/ or partner successfully with youth. Youth may never have been asked their thoughts on an issue. It's a whole new way of doing things and it takes time to make it happen. Education and acceptance is going to take time.

**21. Evaluation studies planned**

- Before-After (before and after program)
- During (during program)
- Case Study

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use. In addition, we will be creating measurement instruments and an overall framework of evaluation relevant to youth community action during the planning period.

**22. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

**Description**

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories". We are introducing use of "The Most Significant Change Technique" (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 5.2 Positive Youth Development/Life Skill Development

## 2. Program knowledge areas

- 806 Youth Development 100 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

Youth development is defined as an ongoing process through which young people meet their needs and develop the competencies they perceive as necessary for survival and transition to adulthood. Youth development refers to the development of the whole person and is not focused on a single attribute, skill, or characteristic, but rather the mastery of competencies needed for happy and productive adulthood. Positive Youth Development is development that is positive and productive for both youth and their communities and occurs form an intentional process that promotes positive outcomes for young people by providing opportunities, choices, relationships, and the support necessary for youth to fully participate. In 4-H we talk about this intentional process in relationship to the essential elements that are necessary to ensure optimum development. Those essential elements that are critical to youth development and central to the 4-H experience are:

The opportunity to experience independence.

The opportunity to experience belonging.

The opportunity to experience generosity.

The opportunity to experience mastery.

## 6. Situation and priorities

Youth development is defined as an ongoing process through which young people meet their needs and develop the competencies they perceive as necessary for survival and transition to adulthood. Youth development refers to the development of the whole person and is not focused on a single attribute, skill, or characteristic, but rather the mastery of competencies needed for happy and productive adulthood. Positive Youth Development is development that is positive and productive for both youth and their communities and occurs form an intentional process that promotes positive outcomes for young people by providing opportunities, choices, relationships, and the support necessary for youth to fully participate. In 4-H we talk about this intentional process in relationship to the essential elements that are necessary to ensure optimum development. Those essential elements that are critical to youth development and central to the 4-H experience are:

- 1) The opportunity to experience independence.
- 2) The opportunity to experience belonging.
- 3) The opportunity to experience generosity.
- 4) The opportunity to experience mastery.

The development of life skills through experiential learning is the foundation of 4-H programming. Healthy youth development strives to help young people develop the inner resources and skills they need to cope with pressures that might lead them to unhealthy and antisocial behaviors. To successfully grow into mature, productive, and contributing citizens, young people need to acquire:

Health/physical skills – having the appropriate knowledge, attitudes and behaviors that will ensure current and future health

Personal/social skills – personal skills such as an ability to understand one's emotions and practice self discipline; and interpersonal skills such as working with others and developing and sustaining friendships

Cognitive/creative skills – a broad base of knowledge, knowledge application skills, life long learning skills and an ability to appreciate and demonstrate creative expression.

Vocational skills – understanding and awareness of life options and the steps necessary to accomplish them. Adequate preparation for work and family life.

Citizenship skills: understanding of the history and values of one's nation, community, race, ethnic and cultural heritage. Desire to be ethical and to be involved in contributing to the broader good. One of the most important issues facing the 4-H youth development program is how to best support youth in becoming productive, contributing individuals of society.

The importance of reaching youth in early adolescence is well documented in a number of studies. The NYS 4-H Club study

results show that the process of youth development is positively influenced in multiple ways by 4-H Club membership. The majority of Club members felt they had gained multiple life skills, including public speaking, problem solving, goal setting, leadership and planning skills, self-confidence, citizenship, communication skills, academic gains, expanded horizons, organizational skills, respect for (and from) others, patience, tolerance, and "real world" experience from hands-on projects. Youth who are unsupervised after school are much more likely to engage in activities that place them at risk (Galambos & Maggs, 1991; Steinberg, 1986). Participation in high quality after-school programs is linked with a lower incidence of problem behaviors, such as decreased academic failure, substance use, and delinquency (Newsome, & Ferrari, 2003). Youth who attend these programs have demonstrated improved academic behaviors (better school attendance, more positive school attitudes, and better grades) and improved personal and social skills (positive relationships with adults, opportunity to make new friends; greater self-concept & self-esteem).

#### **7. Assumptions made for the Program**

Program educators and volunteers who work with youth need training and support in how to incorporate research findings and process into program design at the local level with a focus on how to meet the needs of youth at various stages of their development.

Opportunities are needed for youth that focus on specific aspects of life skill development.

Curriculum design should incorporate best practices for building life skill competencies and recognize how different delivery methods may impact life skill development.

Youth have different interests and needs and therefore respond differently to the same opportunities. They should have choices about which activities they participate in and they should have a chance to help shape those activities.

#### **8. Ultimate goal(s) of this Program**

Youth lead healthy, satisfying, productive lives.

Youth become caring and contributing members of society enhancing the quality of life for themselves, their families, and their communities.

Youth become life-long learners.

#### **9. Scope of Program**

- In-State Extension
- Multistate Extension

#### **Inputs for the Program**

##### **10. Expending formula funds or state-matching funds**

- Yes

##### **11. Expending other than formula funds or state-matching funds**

- Yes

##### **12. Expending amount of professional FTE/SYs to be budgeted for this Program**



Year	Extension		Research	
	1862	1890	1862	1890
2007	46.5	0.0	0.5	0.0
2008	46.5	0.0	0.5	0.0
2009	46.5	0.0	0.5	0.0
2010	46.5	0.0	0.5	0.0
2011	46.5	0.0	0.5	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

4-H Youth Development Staff are recruited with Youth Development experience including an understanding in helping youth develop competencies or life skills. New professionals are introduced to 4-H youth development’s system of developing life skills in youth through professional development opportunities using resources such as 4-H 101 and Advancing Youth Development. Staff and volunteers are trained in the use of the NYS 4-H Resource Directory to acquire approved curriculum throughout the nation to teach life skills to 4-H members based on their subject matter interests.

Volunteers in 4-H Youth Development are carefully recruited, screened and selected based on roles needed to promote life skill development in youth. Volunteers, including professional staff from other community agencies and schools, are trained, supported and evaluated to ensure understanding and ability to develop youth and life skills.

Trained 4-H Staff, teachers, community agency staff, volunteers, and teens lead youth in 4-H projects, which are a planned series of learning experiences through which youth develop knowledge, practical skills (woodworking, gardening, cooking, etc.) and life skills (decision-making, self-discipline, leadership, etc.) in a variety of settings. The development of life skills builds assets that promote positive learning and prepare young people for work and adult responsibilities. Statewide, regional, and county events are structured to showcase 4-H project work, to recognize 4-H youths accomplishments and to allow 4-H participants opportunities for developing mastery, independence, generosity and belonging.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Billboards</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

There are four distinct audiences. The youth development educator is professional or paraprofessional staff employed by Cornell Cooperative Extension. The adult volunteer / leader accepts a role defined by a written volunteer position, does not receive compensation for work, and works directly with young people. The 4-H participant is a young person between the ages of 5 and 19 who chooses to participate in the program. The youth development educator / worker within the community works directly with young people and may or may not have formal training in the area of education or youth development.

Youth development educators must understand and be able to apply the intentional process that promotes positive outcomes for young people by providing support, relationships, and opportunities. Additionally, it is necessary for educators to have training and support in how to incorporate research findings process into program design. The adult volunteer leader must be trained in youth development principles and practices to ensure that the program creates positive opportunities for young

people to reach their full potential. Young people must have an active voice in program determination, implementation, evaluation, and policy development. The front line youth worker is provided training in the core concepts of a youth development approach and its implications for youth work practice.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	12000	60000	65000	90000
2008	12000	60000	65000	90000
2009	12000	60000	65000	90000
2010	12000	60000	65000	90000
2011	12000	60000	65000	90000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 1  
2008 Target: 1  
2009 Target: 1  
2010 Target: 1  
2011 Target: 1

**Output Text**

# of youth program educators and adult volunteers participating in programs on positive youth development. (5.2.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth participating in projects related to vocational skills and/or citizenship. (5.2.1b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publications directed to this program.

2007 Target: 2  
2008 Target: 2  
2009 Target: 2  
2010 Target: 2  
2011 Target: 2

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of youth participants who demonstrate gains in vocational/citizenship skills – knowledge, attitudes, and/or behaviors. (5.2.1c)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of youth participants who learn to set goals, make plans and identify resources to achieve goals. (5.2.1d)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of youth program educators and adult volunteers who demonstrate knowledge and/or skill gains in meeting the needs of youth at various stages of development. (5.2.1e)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of youth participants who demonstrate ability to express their ideas confidently and competently. (5.2.1f)

**Outcome Type:** Medium

2007 Target: 30000  
2008 Target: 30000  
2009 Target: 30000  
2010 Target: 30000  
2011 Target: 30000

**Outcome Text**

# of adult volunteers documented to mentor and advise youth and other adult volunteers in an effective and positive manner. (5.2.1g)

**Outcome Type:** Medium

2007 Target: 16000  
2008 Target: 16000  
2009 Target: 16000  
2010 Target: 16000  
2011 Target: 16000

**Outcome Text**

# of youth participants documented as serving in age-appropriate leadership roles. (5.2.1h)

**Outcome Type:** Medium

2007 Target: 2500  
2008 Target: 2500  
2009 Target: 2500  
2010 Target: 2500  
2011 Target: 2500

**Outcome Text**

# of youth organizations/programs documented as reflecting youth needs, interests, and excitement for learning. (5.2.1i)

**Outcome Type:** Long

2007 Target: 450

2008 Target: 450

2009 Target: 450

2010 Target: 450

2011 Target: 450

**20. External factors which may affect outcomes**

- Economy
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Fiscal pressures internal to Extension and among community organizations influence the scope and quality of programming available to youth. Increasing diversity of our populations creates need for a broader array of program materials and strategies and for a focus on multicultural competencies.

**21. Evaluation studies planned**

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

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use. Targeted studies are planned in the areas of.

Targeted studies are planned in the areas of youth participation, youth success stories, and program development. Evaluation will monitor youth over a period of time to determine the impact that 4-H participation has on the development of life skills with particular emphasis on the acquisition of vocational/citizenship skills, communication skills, leadership skills and goal setting. The most simple evaluation study will be gathered from the annual ES-327 Blue Ribbon Youth Enrollment data. The ES-237 collects data from what programs and projects were participated in throughout the 4-H calendar year. Evaluation studies that allow data to be analyzed from a Before-After aspect will be conducted at various events on Campus like Career Exploration and Public Presentations. Other evaluation studies will focus on how well educator staff and volunteers incorporate best practices of positive youth development and life skill development into 4-H youth development programming.

**22. Data Collection Methods**

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

**Description**

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 5.3 Science and Technology Literacy

## 2. Program knowledge areas

- 806 Youth Development 100 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

Youth participate in educational 4-H activities centered in environmental education, biological and physical sciences, plant and animal sciences, technology and engineering, food and nutrition, and textiles and apparel.

## 6. Situation and priorities

In international comparisons, U.S. student performance in mathematics and science is at or below levels attained by students in other countries in the developed world (Science and Engineering Indicators 2004, National Science Board). The longer students stay in the current system the worse they do. According to the 1995 Third International Mathematics and Science Study, U.S. fourth graders ranked second. By twelfth grade, they fell to 16th, behind nearly every other industrialized rival and ahead of only Cyprus and South Africa. (No Child Left Behind, U.S. DOE)

A survey of more than 1700 Science Educators found that 68% of those polled cite science literacy as "essential" for adults (Bayer Corporation, 1999). Hands-on learning has been shown to increasing learning and achievement in science content (Mattheis & Nakayama, 1988; Brooks, 1988; Saunders & Shepardson, 1984; Bredderman, 1982). Research indicates that activity-based science can improve students' attitudes toward science (Rowland, 1990; Kyle, et al., 1988; Jaus, 1977; Kyle et al, 1985). Evidence clearly indicates that hands-on activities increase skill proficiency in processes of science, especially laboratory skills and specific science process skills, such as graphing and interpreting data (Mattheis & Nakayama, 1988). In a 1999 study of NYS 4-H club members, 80.9 percent of members surveyed reported that they prefer hands-on projects and 36.9 percent reported that it was the most important component of their club experience. (Mead et al, 1999).

Research links experiential learning with higher student performance in mathematics and science. 4-H has succeeded in providing such learning opportunities to kids. Approximately 500,000 New York state youth participate in educational 4-H activities centered in environmental education, biological and physical sciences, plant and animal sciences, technology and engineering, food and nutrition, and textiles and apparel. In fact, 77% of all 4-H curriculum has a science and/or technology focus. The strong connection to science and technology exists, in part, because of the connection to Cornell and other land grant universities.

The Science and Technology Program Work Team is working to strengthen the connections between science and technology initiatives at Cornell University, other land grant universities and the Cornell Cooperative Extension Associations. The Science and Technology PWT is working on the NYS 4-H Resource Directory, making additional outreach connections and promoting staff development focused on outreach and science and technology.

## 7. Assumptions made for the Program

Many 4-H educators and 4-H volunteers are not aware of the many different resources or opportunities that are available to them to enhance science and technology learning in their 4-H programs.

Curriculum and program design should incorporate best practices for building life skill competencies and recognize how different delivery methods may impact learning.

Youth have different interests and needs and therefore respond differently to the same opportunities. They should have choices about which activities they participate in and they should have a chance to help shape those activities.

The uniqueness of 4-H is its connection to the land grant university system.

Many opportunities exist to connect youth to the educational resources of Cornell University in the area of science and technology.

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

Youth become knowledgeable, contributing participants in science and technology-related issues in their communities and chosen professions.

**9. Scope of Program**

- In-State Extension
- Multistate Extension

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	9.7	0.0	0.0	0.0
2008	9.7	0.0	0.0	0.0
2009	9.7	0.0	0.0	0.0
2010	9.7	0.0	0.0	0.0
2011	9.7	0.0	0.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a comprehensive, statewide educational program entailing a wide variety of applied research and multiple education methods depending on local context and need. Campus-based faculty and extension associates, the science and technology program work team, the NYSACCE4-HE professional development committee and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

Activities will include:

Connecting kids to science and technology at Cornell University through programs at local Cornell Cooperative Extension associations, educational events at Cornell and by building relationships with Cornell Departments, faculty, staff and students. Enhancing and maintaining accessibility to hands-on science and technology curriculum that has a youth development basis and a connection to land grant universities through the NYS 4-H Resource Directory.



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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● One-on-One Intervention</li> <li>● Other 1 (Provide Curricula)</li> </ul>	<ul style="list-style-type: none"> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

The target audiences for 4-H Science and Technology programming and curricula are youth in grades K-12 and adults who work with youth. These include, but are not exclusive of 4-H Leaders, 4-H Junior Leaders, and 4-H youth members, parents of 4-H members, adult leaders and the youth involved in after school and out-of-school-time programs, summer camp staff and youth campers, classroom teachers and their students in grades K-12, and leaders and youth in other youth serving organizations such as Scouts. Training one adult leader will result in a significant multiplier of youth who will participate in the activity from which their adult leader received training. This audience is reached directly through educational classes and workshops, individual consultations, group consultations and hands-on-curricula. These may be provided to youth or to their adult leaders. Additional contacts are made through newsletter articles highlighting curricula and curriculum reviews. The New York State 4-H Curriculum Resource Directory website provides an opportunity for any person to search for approved curricula in any Science and Technology topic, read a description of the curricula and then purchase it.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	750	24000	35000	50000
2008	750	24000	35000	50000
2009	750	24000	35000	50000
2010	750	24000	35000	50000
2011	750	24000	35000	50000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of 4-H members enrolled in Science and Technology project areas (as reported on ES-237). (5.3.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth reached through school enrichment and special interest programs coded as science and technology related (as reported on ES-237). (5.3.1b)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publications directed to this project.

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

## Outcomes for the Program

### 19. Outcome measures

#### Outcome Text: Awareness created

##### Outcome Text

# of participants demonstrating knowledge or skill gains related to science and technology. (5.3.1c)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

##### Outcome Text

# of participants that report improved success in school science and/or increased interest in science and technology. (5.3.1d)

**Outcome Type:** Medium

2007 Target: 12000

2008 Target: 12000

2009 Target: 12000

2010 Target: 12000

2011 Target: 12000

##### Outcome Text

# of members/participants who report participating in new science/technology related activities (Career Exploration workshops, Special Interest offerings, school science clubs, etc.). (5.3.1e)

**Outcome Type:** Medium

2007 Target: 7500

2008 Target: 7500

2009 Target: 7500

2010 Target: 7500

2011 Target: 7500

##### Outcome Text

# of youth documented to become contributing participants in sci/tech related issues in their communities and/or choose sci/tech related professions and who attribute same at least in part to involvement with the program. (5.3.1f)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

##### Outcome Text

# of members/participants who choose science/technology related college majors/careers. (5.3.1g)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**20. External factors which may affect outcomes**

- Public Policy changes
- Competing Programatic Challenges
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Changing educational standards influence acceptability of existing curricula. Regional demographic differences and differences across communities influence both needs and program strategy.

**21. Evaluation studies planned**

- Before-After (before and after program)
- During (during program)
- Time series (multiple points before and after program)
- 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

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

Targeted studies are planned in the areas of youth participation, youth success stories, and program development with the focus of developing scientifically literate youth through connections to Cornell resources. The Science and Technology Program Work Team will conduct a variety of evaluation studies that will allow for monitoring of youth involvement in programs with a science and technology focus. The most simple evaluation study will be gathered from the annual ES-327 Blue Ribbon Youth Enrollment data. The ES-237 collects data from what programs and projects were participated in throughout the 4-H calendar year. Evaluation studies that allow data to be analyzed from a Before-After aspect will be conducted at various events on Campus like Career Exploration and Animal Crackers. Other evaluation studies will focus on programs offered at the county level, and how they correlate to youth involvement to programs at Cornell.

**22. Data Collection Methods**

- Whole population
- Mail
- Other

**Description**

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

The Most Significant Change Technique will require the Sci-Tech PWT to determine if we want to set up domains prior to collecting data, or after data has been collected. We can determine domains ahead of time, and then always reorganize at a later time. The benefit of collecting success stories is that it allows for a qualitative base to the Sci-Tech program. While the data collection from the ES-237 will be helpful, it won't tell us the specific experiences and knowledge that youth are gaining from being involved in Sci-Tech projects and programs. Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. The Sci-Tech Program Work Team will collect data from the whole population of youth through surveys done by mail, email, and on-site at state-wide and county events. Youth will be encouraged to report success stories through their county educators and program coordinators. Such success stories will allow the Sci-Tech PWT to monitor improved success in academics and interest in new science and technology related activities.

## 1. Name of the Planned Program

### 4.2 Water Resources Management

## 2. Program knowledge areas

- 112 Watershed Protection and Management 100 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

The Water Resource Management Program is a multi-audience effort addressing agricultural and natural resource producers, community decision makers, businesses, organizations, and individual consumers. High quality and readily available water resources are critical not only for drinking and agriculture but for recreation, impacting most New York local economies; industry; and business. Current federal and state regulations place a great deal of emphasis and responsibility on local management of water resources. Continuing applied research and education on non-point source control; stormwater management; watershed management involving interaction of water, soil/land use management, waste management, and air; and resource allocation are critical to protecting, enhancing, and sustaining valuable water resources.

## 6. Situation and priorities

With water quality ranging from one of the most polluted water bodies in the nation, if not the world (Onondaga Lake), to some of the highest quality drinking water supplies (the New York City watershed and Skaneateles Lake); large quantities; flooding to drought conditions; twenty municipal areas subject to the Phase II Stormwater Regulations; fisheries; prolific sole-source aquifers to thousands of individual wells in fractured bedrock; and groundwater problems ranging from over-demand to industrial pollution to agricultural pollution, New York State residents, local government, agriculture and other businesses, and organizations need current information on groundwater and surface water resources management for both quality and quantity purposes. Communities need education targeted to their specific concerns, including groundwater and surface water, stormwater, non-point source pollution control, water conservation, waste management, and interaction of water resources with other resources and the economy.

## 7. Assumptions made for the Program

Producers, local government, individuals, organizations, and businesses often are not fully aware of potential environmental impacts of their operations and/or requirements and opportunities of environmental regulations and programs.

Technical assistance providers relied upon by producers, local government, individuals, organizations, and businesses have parallel needs for current information on appropriate production practices.

Knowledge of the interactions of environmental resources, public health, quality of life, and local economies will lead to an involved, proactive citizenry.

It is possible to simultaneously meet economic and environmental sustainability goals.

## 8. Ultimate goal(s) of this Program

Improved water resources management efforts will result in enhanced and protected water resources for multiple uses, including drinking, fishing, recreation, agriculture, and industry.

The economic vitality of agricultural/natural resources and other businesses is improved, the health of individuals and families are enhanced, and local government operations are made more sustainable through availability of reliable quantities of high quality water.

## 9. Scope of Program

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

**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other then formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	4.6	0.0	1.0	0.0
2008	4.6	0.0	1.0	0.0
2009	4.6	0.0	1.0	0.0
2010	4.6	0.0	1.0	0.0
2011	4.6	0.0	1.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a statewide educational program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Residents and property owners are targeted with stewardship and water resources protection in their homes and on their properties. Businesses, organizations, and producers are targeted with information about reducing impacts of their operations. Local government and community leaders are targeted with information related to governmental management of water resources, such as land use planning. Environmental planners and managers and technical assistance providers are targeted with in-depth information related to their audiences/constituents. Teachers, youth professionals and volunteers are targeted with in-depth knowledge relevant to youth. Youth of all ages are provided with age and grade appropriate knowledge about

water resources; activities to increase stewardship; and information about career opportunities.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	30000	250000	10000	15000
2008	30000	250000	10000	15000
2009	30000	250000	10000	15000
2010	30000	250000	10000	15000
2011	30000	250000	10000	15000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.



2007 Target: 2  
2008 Target: 2  
2009 Target: 2  
2010 Target: 2  
2011 Target: 2

**Output Text**

# of agricultural/natural resources producers and business representatives completing educational programs on managing water resources. (4.2.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of organization and business representatives completing educational programs on managing water resources. (4.2.2a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of local government officials and community leaders completing educational programs on managing water resources and the relationship between water resources and land use management. (4.2.3a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of consumers, residents, and landowners completing educational programs on water resources protection. (4.2.4a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of teachers and youth professionals and volunteers completing educational programs on water resources. (4.2.5a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth completing educational programs on water resources protection. (4.2.6a)

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Output Text**

# refereed publications directed to this program.

2007	Target:	40
2008	Target:	40
2009	Target:	40
2010	Target:	40
2011	Target:	40

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of agricultural/natural resources producers and business representatives who demonstrate knowledge gains about managing water resources. (4.2.1b)

**Outcome Type:** Short

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Outcome Text**

# of organization and business representatives who demonstrate knowledge gains about managing water resources. (4.2.2b)

**Outcome Type:** Short

2007	Target:	0
2008	Target:	0
2009	Target:	0
2010	Target:	0
2011	Target:	0

**Outcome Text**

# of local government officials and community leaders who demonstrate knowledge gains about managing water resources and the relationship between water resources and land use management. (4.2.3b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of consumers, residents, and landowners who demonstrate knowledge gains about water resources protection. (4.2.4b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of teachers and youth professionals and volunteers who demonstrate knowledge gains about water resources protection. (4.2.5b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of youth who demonstrate knowledge gains about water resources protection. (4.2.6b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of agricultural/natural resources producers and business representatives documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance water resources. (4.2.1c)

**Outcome Type:** Medium

2007 Target: 3500  
2008 Target: 3500  
2009 Target: 3500  
2010 Target: 3500  
2011 Target: 3500

**Outcome Text**

# of organization and business representatives documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance water resources. (4.2.2c)

**Outcome Type:** Medium

2007 Target: 750  
2008 Target: 750  
2009 Target: 750  
2010 Target: 750  
2011 Target: 750

**Outcome Text**

# of local government officials and community leaders documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance water resources. (4.2.3c)

**Outcome Type:** Medium

2007 Target: 175  
2008 Target: 175  
2009 Target: 175  
2010 Target: 175  
2011 Target: 175

**Outcome Text**

# of communities documented to have thoroughly assessed the status of their water resources. (4.2.3d)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# of producers, businesses, local governments, organizations, landowners, and individuals that collaborate to develop and implement water resources management strategies. (4.2.3e)

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of consumers, residents, and landowners documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance water resources. (4.2.4c)

**Outcome Type:** Medium

2007 Target: 7500  
2008 Target: 7500  
2009 Target: 7500  
2010 Target: 7500  
2011 Target: 7500

**Outcome Text**

# of teachers and youth professionals and volunteers who incorporate water resources management knowledge into curriculum. (4.2.5c)

**Outcome Type:** Medium

2007 Target: 200  
2008 Target: 200  
2009 Target: 200  
2010 Target: 200  
2011 Target: 200

**Outcome Text**

# of youth documented to have modified existing practices and/or adopted new practices to protect/enhance water resources. (4.2.6c)

**Outcome Type:** Medium

2007 Target: 2000  
2008 Target: 2000  
2009 Target: 2000  
2010 Target: 2000  
2011 Target: 2000

**Outcome Text**

# of youth introduced to variety of environmental and natural resources career options. (4.2.6d)

**Outcome Type:** Medium

2007 Target: 25000  
2008 Target: 25000  
2009 Target: 25000  
2010 Target: 25000  
2011 Target: 25000

**Outcome Text**

# of agricultural/natural resources producers and business representatives documented to have improved and/or protected water resources. (4.2.1d)

**Outcome Type:** Long

2007 Target: 1750  
2008 Target: 1750  
2009 Target: 1750  
2010 Target: 1750  
2011 Target: 1750

**Outcome Text**

Documented instances in which resource managers credit Implementation of improved water resources management practices for lower costs for remediation. (4.2.2d)

**Outcome Type:** Long

2007 Target: 15  
2008 Target: 15  
2009 Target: 15  
2010 Target: 15  
2011 Target: 15

**Outcome Text**

# of communities documented to have established or modified land use and development policies to enhance and protect water resources. (4.2.3f)

**Outcome Type:** Long

2007 Target: 20  
2008 Target: 20  
2009 Target: 20  
2010 Target: 20  
2011 Target: 20

**Outcome Text**

# of youth documented to have chosen water resources-related careers. (4.2.6e)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Documented instances in which resource managers credit improved groundwater and surface water quality, decreased flooding, and/or decreased over-use of water supplies to implementation of improved water resources management practices. (4.2.7a)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

Documented instances in which public health officials credit decreased public health risks to implementation of improved water resources management practices. (4.2.7b)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# consumers, residents, and landowners documented to have modified existing practices or technologies and/or adopted new management practices to protect/enhance water resources. (4.2.4d)

**Outcome Type:** Short

2007 Target: 3500  
2008 Target: 3500  
2009 Target: 3500  
2010 Target: 3500  
2011 Target: 3500

## 20. External factors which may affect outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

### Description

Natural disasters such as floods and droughts can prompt action related to water resources management. However, natural disasters can adversely affect the economy, limiting the ability to take action. Public health impacts of water resources also can prompt action related to water resources management, including willingness to spend money to make improvements. Appropriations, public policy, and regulations directly affect ability to pursue water resources management practices.

## 21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- During (during program)
- Case Study

### Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Other

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

## 1. Name of the Planned Program

### 4.3 Waste Management and Prevention

## 2. Program knowledge areas

- 133 Pollution Prevention and Mitigation 86 %
- 403 Waste Disposal, Recycling, and Reuse 14 %

## 3. Program existence

- Mature (More than five years)

## 4. Program duration

- Long-Term (More than five years)

## 5. Brief summary about Planned Program

The Waste Management Program is a multi-disciplinary program that addresses waste management problems and broader issues of waste generation and composition, waste reduction, risk management, environmental equity and public decision-making. Major goals are to improve the ability of local officials, businesses and the public to make informed waste management decisions and to enhance the competency of solid waste professionals through increased training opportunities. Up to date, objective, research-based knowledge is extended to a wide range of audiences, including county solid waste personnel, wastewater treatment plant operators, state and local highway personnel, state agencies, agricultural producers, individual home and landowners, and youth.

## 6. Situation and priorities

With a wide range of waste producers, including individual, agricultural, industrial, and government, New York residents, agricultural producers, businesses and industry, and government need current information and solutions on techniques for managing waste, reducing waste at the source, managing risk and environmental inequities resulting from waste generation and disposal practices.

## 7. Assumptions made for the Program

Producers, local government, individuals, organizations, and businesses and industry often are not fully aware of potential environmental impacts of their operations and/or requirements and opportunities of environmental regulations and programs.

Technical assistance providers relied upon by producers, local government, individuals, organizations, and businesses and industry have parallel needs for current information on appropriate waste management and reduction practices.

Knowledge of the interactions of environmental resources, public health, quality of life, and local economies will lead to an involved, proactive citizenry.

It is possible to simultaneously meet economic and environmental sustainability goals.

## 8. Ultimate goal(s) of this Program

Improved waste management and waste reduction efforts will result in an enhanced and protected environment, including soil, air, and water, and reduced risk for individuals and families.

The economic vitality of agricultural/natural resources and other businesses is improved, the health of individuals and families are enhanced, and local government operations are made more sustainable through waste reduction and economical and safe management of waste.

## 9. Scope of Program

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



**Inputs for the Program**

**10. Expending formula funds or state-matching funds**

- Yes

**11. Expending other than formula funds or state-matching funds**

- Yes

**12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	2.4	0.0	0.5	0.0
2008	2.4	0.0	0.5	0.0
2009	2.4	0.0	0.5	0.0
2010	2.4	0.0	0.5	0.0
2011	2.4	0.0	0.5	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a statewide educational program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Public Service Announcement</li> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Residents and property owners are targeted with stewardship and waste reduction and management in their homes and on their properties. Businesses, organizations, and producers are targeted with information about reducing impacts of their operations. Local government and community leaders are targeted with information related to governmental management of waste, such as relationship between waste management and land use, effective recycling programs, and roadkill management. Environmental planners and managers and technical assistance providers are targeted with in-depth information related to their audiences/constituents. Teachers and youth professionals and volunteers are provided with curriculum and training. Youth are targeted with age appropriate education.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	5500	50000	2500	15000
2008	5500	50000	2500	15000
2009	5500	50000	2500	15000
2010	5500	50000	2500	15000
2011	5500	50000	2500	15000

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	0
2008	0
2009	0
2010	0
2011	0

**18. Output measures**

**Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 1  
 2008 Target: 1  
 2009 Target: 1  
 2010 Target: 1  
 2011 Target: 1

**Output Text**

# of agricultural/natural resources producers and business representatives completing educational programs on managing and reducing waste. (4.3.1a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of organization and business representatives completing educational programs on managing and reducing waste. (4.3.2a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of local government officials and community leaders completing educational programs on managing and reducing waste and the relationship between waste and land use management. (4.3.4a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of consumers, residents, and landowners completing educational programs on waste reduction and management. (4.3.5a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of youth completing educational programs on waste management and reduction. (4.3.6a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# of teachers and youth professionals and volunteers completing educational programs on waste management and reduction. (4.3.7a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Output Text**

# refereed publications directed to this program.

2007 Target: 2  
2008 Target: 2  
2009 Target: 2  
2010 Target: 2  
2011 Target: 2

**Outcomes for the Program**

**19. Outcome measures**

**Outcome Text: Awareness created**

**Outcome Text**

# of agricultural/natural resources producers and business representatives who demonstrate knowledge gains about waste management and reduction. (4.3.1b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of organization and business representatives who demonstrate knowledge gains about waste management and reduction. (4.3.2b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of local government officials and community leaders who demonstrate knowledge gains about waste management and reduction and the relationship between waste and land use management. (4.3.4b)

**Outcome Type:** Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of consumers, residents, and landowners who demonstrate knowledge gains about waste management and reduction. (4.3.5b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of youth who demonstrate knowledge gains about waste management and reduction. (4.3.6b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of teachers and youth professionals and volunteers who demonstrate knowledge gains about waste management and reduction. (4.3.7b)

**Outcome Type:** Short

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

# of agricultural/natural resources producers and business representatives documented to have modified existing practices or technologies and/or adopted new practices to manage and reduce waste. (4.3.1c)

**Outcome Type:** Medium

2007 Target: 3500

2008 Target: 3500

2009 Target: 3500

2010 Target: 3500

2011 Target: 3500

**Outcome Text**

# of organization and business representatives documented to have modified existing practices or technologies and/or adopted new practices to manage and reduce waste. (4.3.2c)

**Outcome Type:** Medium

2007 Target: 750

2008 Target: 750

2009 Target: 750

2010 Target: 750

2011 Target: 750

**Outcome Text**

# of producers, businesses, local governments, organizations, landowners, and individuals who collaborate to develop and implement waste reduction and management strategies. (4.3.3a)

**Outcome Type:** Medium

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of local government officials and community leaders documented to have modified existing practices or technologies and/or adopted new practices to manage and reduce waste. (4.3.4c)

**Outcome Type:** Medium

2007 Target: 175  
2008 Target: 175  
2009 Target: 175  
2010 Target: 175  
2011 Target: 175

**Outcome Text**

# of consumers, residents, and landowners documented to have modified existing practices or technologies and/or adopted new practices to manage and reduce waste. (4.3.5c)

**Outcome Type:** Medium

2007 Target: 3500  
2008 Target: 3500  
2009 Target: 3500  
2010 Target: 3500  
2011 Target: 3500

**Outcome Text**

# of youth documented to have modified existing practices and/or adopted new practices to manage and reduce waste. (4.3.6c)

**Outcome Type:** Medium

2007 Target: 1250  
2008 Target: 1250  
2009 Target: 1250  
2010 Target: 1250  
2011 Target: 1250

**Outcome Text**

# of youth introduced to variety of environmental and natural resources career options. (4.3.6d)

**Outcome Type:** Medium

2007 Target: 20000  
2008 Target: 20000  
2009 Target: 20000  
2010 Target: 20000  
2011 Target: 20000

**Outcome Text**

# of teachers and youth professionals and volunteers who incorporate waste reduction and management knowledge into curriculum. (4.3.7c)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# of agricultural/natural resources producers and business representatives documented to have improved waste management practices. (4.3.1d)

**Outcome Type:** Long

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

**Outcome Text**

# of organizations and businesses documented to have established or modified waste management policies to enhance and protect land and water resources. (4.3.2d)

**Outcome Type:** Long

2007 Target: 750  
2008 Target: 750  
2009 Target: 750  
2010 Target: 750  
2011 Target: 750

**Outcome Text**

Documented instances in which resource managers credit reduced risk from waste handling and disposal; decreased waste volume; and improved environmental equity to implementation of improved waste management practices. (4.3.3b)

**Outcome Type:** Long

2007 Target: 50  
2008 Target: 50  
2009 Target: 50  
2010 Target: 50  
2011 Target: 50

**Outcome Text**

# of local government officials and community leaders documented to have established or modified waste management policies to enhance and protect land and water resources. (4.3.4d)

**Outcome Type:** Long

2007 Target: 25  
2008 Target: 25  
2009 Target: 25  
2010 Target: 25  
2011 Target: 25

**Outcome Text**

# of consumers, residents, and/or landowners, documented to have improved waste management practices. (4.3.5d)

**Outcome Type:** Long

2007 Target: 2500

2008 Target: 2500

2009 Target: 2500

2010 Target: 2500

2011 Target: 2500

**Outcome Text**

# of youth documented to have chosen waste management-related careers. (4.3.6e)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

Documented instances in which public health officials credit decreased public health risks to implementation of improved waste management practices. (4.3.8a)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**Outcome Text**

Documented instances in which resource managers credit lower costs for remediation to implementation of improved waste management practices. (4.3.8b)

**Outcome Type:** Long

2007 Target: 0

2008 Target: 0

2009 Target: 0

2010 Target: 0

2011 Target: 0

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Government Regulations

**Description**

Natural disasters such as floods and droughts can adversely affect the economy, limiting the ability to take action. Public health impacts of waste management can prompt action, including willingness to spend money to make improvements.

Appropriations, public policy, and regulations directly affect ability to pursue waste management practices. Available markets



for recycling and waste products can vary according to perceived risk factors.

## 21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- During (during program)
- Case Study

### Description

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation “system” rather than as bounded “studies” or investigations (Smith, 2005). Because each of the models addresses a broad combination of applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected “success stories”. We are introducing use of “The Most Significant Change Technique” (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.

**1. Name of the Planned Program****1.2 Viable and Sustainable Production Processes -- Animal****2. Program knowledge areas**

- 313 Internal Parasites in Animals 1 %
- 312 External Parasites and Pests of Animals 3 %
- 307 Animal Management Systems 3 %
- 302 Nutrient Utilization in Animals 31 %
- 301 Reproductive Performance of Animals 6 %
- 311 Animal Diseases 14 %
- 305 Animal Physiological Processes 22 %
- 306 Environmental Stress in Animals 3 %
- 303 Genetic Improvement of Animals 16 %
- 308 Improved Animal Products (Before Harvest) 1 %

**3. Program existence**

- Mature (More than five years)

**4. Program duration**

- Long-Term (More than five years)

**5. Brief summary about Planned Program**

Cornell University has a commitment to agriculture enterprises and assisting them in making the best choices when selecting production principles and practices to enhance economic and environmental sustainability. We provide comprehensive research and education programming focused on assessing existing and new production-management practices and techniques with special emphasis on agricultural environmental management. As part of our strategy, we emphasize integration of research and extension to accelerate: identification of problems, focusing scientific effort to resolving problems, field-testing and evaluation of technology and cultural practices, and implementation of environmentally superior innovations/practices for the agricultural, horticultural, and natural resource communities.

**6. Situation and priorities**

Improving production efficiency, quality and safety of plants and animals in agricultural, horticultural, and natural resource production systems is fundamental to improving our ability to compete in a global economy. Managers of New York's more than 40,000 farms face dynamic and complex production environments. Extensive knowledge and skill is needed for identifying, selecting, and adopting principles and practices that optimize production management and improve profitability and sustainability in accordance with business goals. Technologies such as genetic engineering, satellite imagery and GIS, computer aided management decision tools and the like were in exploratory phases a decade or less ago but are readily available today for adoption and use. Technical assistance providers have similar needs to remain up-to-date and able to provide appropriate recommendations for each enterprise.

Production improvements can be accomplished through: 1) incorporating established and new practices and technologies; 2) traditional and modern genetics which select for desired traits (such as yield, flavor and pest resistance) and an understanding of how they can be expressed under different environmental regimes; 3) improving our understanding of the nutritional requirements for plants and animals so that inputs and waste products are minimized; and, 4) improving our understanding of the impact of environmental conditions on animal production.

Protecting and improving the integrity of our environment and maintaining ecological systems enables human prosperity. Expanding human populations cause growing consumer demands on the agriculture and food system. This magnifies the challenges of balancing food production and processing with land stewardship and protection of the environment. The long-term sustainability of agriculture is inexorably linked to environmental quality.

Specific emphasis is placed on: assessing existing and new production-management practices and techniques; improved product handling and storage to maintain quality and safety; crop choices for sustainability and profitability, and improving

production efficiency through adoption of best management practices. We place special emphasis on agricultural environmental management including topics such as: potential environmental impacts of practices; requirements and opportunities of environmental regulations and programs; whole farm systems including integrated nutrient management, integrated pest management and environmental protection; waste management and recycling methods for sustainable agricultural production and environmental protection; water conservation and protection measures; and soil health management and protection. New regulations and guidelines, including the Confined Animal Feeding Operations regulations, have created opportunities for more multi-disciplinary research, for example, precision animal feeding as an aspect of nutrient management on farms and nutrient management as an aspect of watershed management.

#### **7. Assumptions made for the Program**

Producers often are not fully aware of or skillful in managing production principles and practices that may help optimize their operations for economic and environmental sustainability.

Producers often are not fully aware of potential environmental impacts of their operations and/or requirements and opportunities of environmental regulations and programs.

Technical assistance providers relied upon by producers have parallel needs for current information on appropriate production practices.

In most cases, it is possible to simultaneously meet economic and environmental sustainability goals.

Integrated system approaches are needed to expand our understanding of trade-offs and develop BMPs that better address current and future challenges as well as food safety.

#### **8. Ultimate goal(s) of this Program**

Agriculture remains an important contributor to the economic and social health of New York communities.

Producers optimize production management and improve profitability and sustainability in accordance with their goals.

Increased use of sustainable practices results in improved or protected soil, air and water quality and production of high quality and safe food and fiber.

#### **9. Scope of Program**

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

#### **Inputs for the Program**

##### **10. Expending formula funds or state-matching funds**

- Yes

##### **11. Expending other than formula funds or state-matching funds**

- Yes

##### **12. Expending amount of professional FTE/SYs to be budgeted for this Program**

Year	Extension		Research	
	1862	1890	1862	1890
2007	7.8	0.0	15.0	0.0
2008	7.8	0.0	15.0	0.0
2009	7.8	0.0	15.0	0.0
2010	7.8	0.0	15.0	0.0
2011	7.8	0.0	15.0	0.0

**Outputs for the Program**

**13. Activity (What will be done?)**

This is a comprehensive, statewide educational program entailing a wide range of applied research activities and multiple education methods depending on local context and need. Campus-based faculty and extension associates, regional specialists and county-based educators all are involved in designing, implementing, and evaluating tailored educational efforts depending on the focus and scope of their role.

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

Extension	
Direct Method	Indirect Methods
<ul style="list-style-type: none"> <li>● Education Class</li> <li>● Workshop</li> <li>● Group Discussion</li> <li>● One-on-One Intervention</li> <li>● Demonstrations</li> </ul>	<ul style="list-style-type: none"> <li>● Newsletters</li> <li>● TV Media Programs</li> <li>● Web sites</li> </ul>

**15. Description of targeted audience**

Key audiences served, directly and indirectly include: established producers; new and young producers, consultants and service providers, input suppliers, governmental agencies, and local and state agricultural leaders.

**16. Standard output measures**

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

	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Year	Target	Target	Target	Target
2007	4500	15000	0	0
2008	4500	15000	0	0
2009	4500	15000	0	0
2010	4500	15000	0	0
2011	4500	15000	0	0

**17. (Standard Research Target) Number of Patents**

Expected Patents	
Year	Target
2007	10
2008	10
2009	10
2010	10
2011	10

**18. Output measures****Output Text**

# non-credit instructional activities directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# non-credit instructional activity contact hours directed to this program.

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# funded applied research projects directed to this program.

2007 Target: 28  
 2008 Target: 28  
 2009 Target: 28  
 2010 Target: 28  
 2011 Target: 28

**Output Text**

# of producers completing education programs on existing and new practices and techniques; improved product handling and storage to maintain quality and food safety; and/or improving production efficiency through adoption of best management practices. (1.2.1a)

2007 Target: 0  
 2008 Target: 0  
 2009 Target: 0  
 2010 Target: 0  
 2011 Target: 0

**Output Text**

# of producers completing programs on potential environmental impacts of practices; environmental regulations and programs; whole farm systems including integrated nutrient management, integrated pest management; waste

management; and water protection. (1.2.2a)

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

#### Output Text

# refereed publications directed to this program

2007 Target: 185  
2008 Target: 185  
2009 Target: 185  
2010 Target: 185  
2011 Target: 185

### Outcomes for the Program

#### 19. Outcome measures

##### Outcome Text: Awareness created

###### Outcome Text

# of producers demonstrating knowledge/skill gains re existing/new practices and techniques; improved product handling and storage to maintain quality and food safety; and/or improving production efficiency through adoption of best management practices. (1.2.1b)

Outcome Type: Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

###### Outcome Text

# of producers demonstrating knowledge/skill gains regarding environmental impacts of practices; environmental regulations and programs; whole farm systems including integrated nutrient management, integrated pest management; waste management; and water protection. (1.2.2b)

Outcome Type: Short

2007 Target: 0  
2008 Target: 0  
2009 Target: 0  
2010 Target: 0  
2011 Target: 0

###### Outcome Text

# of producers modifying existing practices and/or adopted new production mngmt. practices to address current issues and improve yield efficiency, consistency and/or quality. (1.2.1c)

**Outcome Type:** Medium

2007 Target: 2200  
2008 Target: 2200  
2009 Target: 2200  
2010 Target: 2200  
2011 Target: 2200

**Outcome Text**

# technical assistance providers documented to have incorporated current best management practices in their recommendations. (1.2.1e)

**Outcome Type:** Medium

2007 Target: 100  
2008 Target: 100  
2009 Target: 100  
2010 Target: 100  
2011 Target: 100

**Outcome Text**

# of producers documented to have assessed potential environmental impacts of their operations and developed and acted on plans to eliminate or minimize those concerns. (1.2.2c)

**Outcome Type:** Medium

2007 Target: 2000  
2008 Target: 2000  
2009 Target: 2000  
2010 Target: 2000  
2011 Target: 2000

**Outcome Text**

# of producers who report improved ability to anticipate and respond to environmental and market variations. (1.2.1d)

**Outcome Type:** Medium

2007 Target: 1200  
2008 Target: 1200  
2009 Target: 1200  
2010 Target: 1200  
2011 Target: 1200

**Outcome Text**

# of producers documented to have developed and implement nutrient mngmt. and/or waste mngmt. plans or modified existing plans to meet production and environmental goals and meet regulations. (1.2.2d)

**Outcome Type:** Medium

2007 Target: 500  
2008 Target: 500  
2009 Target: 500  
2010 Target: 500  
2011 Target: 500

**Outcome Text**

# of producers documented to have improved economic returns to agricultural business profitability and vitality resulting from enhanced production management practices. (1.2.1f)

**Outcome Type:** Long

2007 Target: 1800  
2008 Target: 1800  
2009 Target: 1800  
2010 Target: 1800  
2011 Target: 1800

**Outcome Text**

# of producers documented to meet or exceed current environmental protection standards as a result of participating in relevant educational programs. (1.2.2e)

**Outcome Type:** Long

2007 Target: 250  
2008 Target: 250  
2009 Target: 250  
2010 Target: 250  
2011 Target: 250

**Outcome Text**

# resource managers reporting reduced environmental concerns for participating enterprises. (1.2.2f)

**Outcome Type:** Long

2007 Target: 20  
2008 Target: 20  
2009 Target: 20  
2010 Target: 20  
2011 Target: 20

**20. External factors which may affect outcomes**

- Natural Disasters (drought,weather extremes,etc.)
- Economy
- Public Policy changes
- Government Regulations
- Populations changes (immigration,new cultural groupings,etc.)

**Description**

Agricultural/horticultural enterprises operate in a complex and volatile context involving susceptibility to weather extremes, changing governmental policies and regulations, competitive land uses and shifting development patterns, evolving consumer demands, and globally influenced markets. Fundamental change is occurring in the state and regional economies within which agricultural and horticultural enterprises operate. The specific implications of these external factors vary greatly by locale and across commodities and business forms. Population and land use changes in farming communities can lead to producer/neighbor issues that influence choice of production practices.

**21. Evaluation studies planned**

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study

**Description**

The evaluation approach for this and all other logic models included in our plan is more accurately described as an evaluation "system" rather than as bounded "studies" or investigations. Because each of the models addresses a broad combination of



applied research and extension initiatives spanning multiple audiences, methods, and intended outcomes, a combination of routine program monitoring and documentation, near-term outcome assessment, and targeted follow-up activities is required to provide comprehensive assessment. In addition, specialized data needs of funding partners must be addressed, sometimes using methods and/or accountability structures required by the funders. In support of each of the logic models, we provide educators with recommended evaluation strategies and, where available, recommended standard instruments for their use.

## 22. Data Collection Methods

- Sampling
- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Other

### Description

Basic program documentation and monitoring activities include simple logging of program outputs and participation, including required equal program opportunity data. Program outcome data is collected through direct observation, participant feedback before, during, and after programs, systematic collection of anecdotal information, and delayed follow-up surveys. Each local site uses a different mix of these methods appropriate to their level of investment in the program. (The mix of Cornell Cooperative Extension programs in local extension units largely is determined by that unit.) Each local extension unit annually provides via a web-based reporting system program participation data, reports against an output/outcome template derived from the approved Federal plan of work, and selected "success stories". We are introducing use of "The Most Significant Change Technique" (Davies and Dart, 2005) to systematize and improve the rigor of success story collection.