

2007 University of Massachusetts Extension Plan of Work

Brief Summary about Plan of Work

Our Mission

The mission of UMass Extension is to improve the health, well-being and security of youth, families and communities; conserve and enhance natural resources; and strengthen agriculture and food systems. We fulfill our mission by utilizing the research and teaching capacity of the University of Massachusetts Amherst to generate and communicate knowledge while creating approaches, methods, and tools for solving problems. UMass Extension links the Massachusetts land grant university with a larger community of people in collaborative partnerships to address issues of fundamental importance to the people of Massachusetts, New England, and the nation.

UMass Extension Critical Issues

Programs offered by UMass Extension are organized according to eight critical issues. These issues serve as a framework to measure the impact of what we do and communicate the value of our work in ways that are meaningful to a wide variety of internal and external clients and partners. The critical issues for our five year plan were determined by an extensive process that was designed to assess the priorities and perspectives of broad range of citizens and public stakeholders in ways that are relevant to both USDA Emphasis Areas and the teaching and research capacity of the University of Massachusetts Amherst. It should also be noted that our eight critical issues overlap considerably, and that many of our specific projects and initiative will address multiple issues. Additional details and information on this process are provided in the stakeholder engagement section of this five year plan.

The Critical Issues identified for our five-year plan of work are:

1. Natural Resource-based Economic Development
2. Food Production
3. Water Resource Protection
4. Land Use Management
5. Ecosystem Management, Protection and Restoration
6. Food Safety
7. Health Promotion and Disease Prevention
8. Youth Development and Engagement

Program Goals

Staff teams with expertise in our eight Critical Issue areas developed the planned programs that are included in this five year plan of work. Within these planned programs each team identified a set of impacts (primarily behavioral changes) for the audiences that our programs will target. These medium-term goals are related to a set of 4 general long-term goals that have been specified at the organizational level.

Stronger Agriculture and Food Systems - Develop and expand systems for environmentally sound and economically viable food production, distribution, access and utilization.

Improved Human Health and Well-Being - Diverse youth, families, and communities will achieve greater physical and social well-being.

Enhanced Health and Productivity of Natural Resources and Ecosystems - The quality of land, water, plant, animal, and biodiversity resources will be protected and enhanced, and healthy self-sustaining ecosystems maintained.

Stronger Local Economies - Natural and human resources will be managed or cultivated in ways that support strong local economies.

Our Unique Role

UMass Extension has the unique capability of bringing the University of Massachusetts Amherst's depth and breadth of knowledge and its academic resources to bear in identifying and solving problems. Our research and teaching programs link different departments and facilitate mutually beneficial collaborations between the University and external organizations, individuals, and businesses. In so doing, UMass Extension makes a vital contribution to the public and to the educational experiences and research opportunities of the university.

Utilizing the resources of UMass Amherst and the United States Department of Agriculture's national network of Extension programs, UMass Extension advances its organizational goals by:

Engaging university faculty and outside partners in the identification of critical issues and priorities for research and education;
 Conducting integrated research and education programs as sustained efforts to address critical issues, resulting in tangible outcomes;

Facilitating interdepartmental and interdisciplinary research and education programs that address critical issues;

Contributing to the undergraduate and graduate student experience by providing opportunities for community service learning and applied research;

Serving as a clearinghouse for the dissemination of research-based knowledge, ideas, information and techniques;

Pioneering innovative educational approaches and technologies;

Strengthening the ability of university departments and units to meet their outreach goals by forging partnerships and providing support.

Extension employs these methods to achieve specific impacts that have been defined within our planned programs for specific target audiences. Most Extension programs however are also designed to expand the public knowledge base and general awareness of our issues and elevate the level of public discourse. Extension programs educate a wide variety of citizens, including individuals who make (or have the power to influence) decisions with public consequences. Extension programs seek to promote an understanding of the consequences of various alternatives and to encourage well-informed policy decisions that better serve the public interest. While this is a valuable course to pursue, we recognize that these types of impacts are difficult to accurately measure and thus claim credit for.

Scope of Program and FTE's

FTE's reported in this plan of work include faculty and professional staff supported by Smith Lever 3-d funds and the Family Nutrition Program (FNS Food Stamp Education), as well as contracts, fees and gifts. Specifically, FTE's devoted to EFNEP and FNP represent, in FY07, approximately 26% of total FTE in this plan, working primarily in the Health Promotion, Food Safety and Youth Development and Engagement planned program areas.

Estimated number of professional FTEs/SYs total in the State.

Year	Extension		Research	
	1862	1890	1862	1890
2007	104.0	0.0	0.0	0.0
2008	104.0	0.0	0.0	0.0
2009	104.0	0.0	0.0	0.0
2010	105.0	0.0	0.0	0.0
2011	106.0	0.0	0.0	0.0

Merit Review Process

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

- Internal University Panel
- External University Panel
- External Non-University Panel

Brief explanation

External University Panel

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

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

Internal University Review Panel

Academic deans and collaborating department heads from the College of Natural Resources and the Environment and the School of Public Health and Health Sciences will review this Plan of Work on an annual basis. The Director of the Agricultural Experiment Station and Vice Provost for University Outreach also participate in this annual review.

External Non-University Review Panel

The Massachusetts legislature established a Board of Public Overseers to provide advice and oversight to UMass Extension. This 15 member board, comprised of representatives of constituent organizations, meets quarterly to review and advise UMass Extension and the Chancellor the UMass Amherst. Review of the Plan of Work is a major function of this board.

Evaluation of Multis & Joint Activities

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

UMass Extension has recently engaged in a comprehensive stakeholder engagement process that resulted in the specification of eight critical issues that define the conceptual structure for our programs. These eight issues, that also serve as the "Planned Programs" in our Federal Plan of Work, are strategically important for the organization to pursue because they reflect the convergence of our USDA mission, the research and teaching capacity of University of Massachusetts and issues that are fundamentally important to the citizen of Massachusetts.

Our eight critical issues encompass a host of regional concerns that are not defined, or bound by, the borders of the state of Massachusetts (e.g., food production, water and ecosystem protection, and economic development). Addressing these issues from a regional or multi-state perspective brings additional practical and intellectual resources to bear and creates the potential for more comprehensive and cost effective programs.

Integrated research and education programs are a key element in our strategy to address the complex of critical issues identified by our stakeholders. Academic scholarship and traditional process of scientific discovery are crucial for solving problems related to water quality, food production, ecosystem and human health. However, for scientific knowledge to be useful to our constituents, UMass Extension must develop a variety of approaches, technologies, curriculum and other appropriate mechanisms for translating science into practice. In many cases, research and outreach can be integrated within a single programmatic effort, operating seamlessly, rather than as distinct process, in pursuit of an organizationally defined set of goals.

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

By collaborating with other states, UMass Extension can increase the range, number, and depth of programmatic offerings to meet a more diverse range of clientele needs. In agricultural programs in particular, producers of specialty crops such as Christmas trees, maple syrup, honey, and organic products will have increased access to educational products.

In many cases the needs of underserved audiences differ substantially from those in the larger population. UMass has planned integrated research and education programs that address a variety of food safety concerns and promote personal health. In these areas, UMass Extension has identified specific audiences who are underserved because of their economic status or

because of issues related to literacy (reading and English language proficiency). The research component of these programs and the supporting educational materials are specifically designed to meet the needs and address the concerns of these audiences. Additionally, a key impact specified within our Health Promotion and Disease Prevention planned program is "minority and low-income families will improve lifestyle behaviors to reduce health disparities". Integrated research and education programs that address the issue of Health Promotion and Disease Prevention will strive to document progress towards this outcome.

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

Multi-state and Integrated activities will be planned, evaluated and reported within the context of our eight publicly identified critical issues/Federal Planned Programs. UMass Extension is in the later phase of developing an on-line planning system as a part of collaborative effort with three other New England States (NH, VT, ME). This system will facilitate the tracking of time and effort that is devoted to Multi-state and Integrated activities. These activities will be embedded within our eight planned programs and will report outcomes and impacts in the same manner as all other UMass Extension Programs. Based upon their focus and priorities, Multi-state and Integrated activities will be associated with one or more critical issues. Staff will plan and report progress towards a set of impacts that have been identified by our organizational planning teams.

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

Especially within agricultural and natural-resource related program areas, multi-state activities will allow UMass Extension to work collaboratively with communities, industries and other organizations within the geographic, ecological and natural boundaries as defined by the issue or problem, rather than by the borders of any particular state. This will increase the efficacy of our programs and take advantage of economies of scale.

Integrating research and education is essential for Extension's success in Massachusetts. The most effective Extension programs will involve an intimate and mutually reinforcing relationship between issues of public concern and the university-based research that can help address those issues. The extent to which research and practice can become more closely aligned will result in programs that reflect sound policy, incorporate best practices and are responsive to public concerns.

Stakeholder Input

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

- 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 individuals
- Survey of the general public

Brief explanation.

In preparing this five-year plan of work, UMass Extension has initiated an ambitious process to obtain input from a variety of stakeholders and citizens who are interested in and value the work that Extension does. Our Stakeholder Engagement process has helped us plan and implement programs that are responsive to state and local needs.

Stakeholder Engagement involves a variety of activities that are reflected in our five year Plan of Work. These include:

Web-based stakeholder survey

Public Forums

Assessment of UMass Faculty Interests

Focus Group with State Advisory Board

Web-based Stakeholder Survey

In March 2006, UMass Extension administered a web-based survey to a broad range of citizens and stakeholders in preparation for the development of a 5-year Plan of Work. The goal of the survey was to obtain information that will help Extension plan and implement programs that are responsive to state and local needs. Through an earlier process, Extension administrators and program leaders identified 8 primary topic areas for the stakeholder survey that were based upon our USDA mission, research and teaching interests of UMass faculty and Extension staff capacity.

Extension professional staff, state and federal agency representatives, and members of our state advisory board were asked to provide email contact information for individuals they work with or know of, who possess comprehensive knowledge and a broad perspective in these eight areas. Seven hundred sixty-eight (768) individuals were contacted via email. Due to breadth of their expertise, some respondents were asked to complete more than one survey, yielding a total of 918 survey requests. It is

impossible to know with certainty the exact number of individuals who received these requests. A total of 378 surveys were returned, yielding a (conservative estimated) response rate of 41.2%. These individuals were subsequently sent email messages that directed them to a page on our website where the results from the survey were posted.

Public Forums

UMass Extension sponsored two Public Forums in April 2006 to obtain input for our 5-year Plan of Work. At each forum we solicited comments from citizens we work with, or who are interested in and value our work, to help us plan and implement programs that are responsive to state and local needs. At each event we briefly reviewed our Plan of Work development process and presented results from our online stakeholder survey. Individuals were given up to 5 minutes to deliver comments and also asked to submit copies of their comments in writing. Only six individuals attended these forums and submitted comments, which were directed to our planning teams.

Assessment of UMass Faculty Interests

A consulting team was hired by UMass Extension to conduct the initial part of this assessment. The consultants first reviewed 11 Emphasis Areas specified by the US Department of Agriculture and then conducted a web-scan of university departments and faculty websites. Consultants identified a list of faculty whose interests fit within the USDA areas. Approximately 50 faculty were identified, but due to resource constraints, only 26 interviews were conducted. Priority for interviews was given to faculty with whom we had limited prior experience working directly with. The main purpose of the interview was to understand the applied research interests of each faculty member.

Faculty who we were not able to interview were sent, via email, a request to complete a brief survey which asked them several questions about their work that engages individuals, communities and groups outside the university. Sixty-seven faculty were contacted and responses were received from twenty-five.

A report was issued to summarize information obtained through interviews and surveys of faculty interests. This document has served primarily as an internal resource to UMass Extension planning teams as they developed broad 5-year plans that address critical issues in Massachusetts. In addition to summarizing faculty interests, the document also attempts to summarize ideas faculty have put forth for specific opportunities or approaches that could be enhanced through collaborative efforts with Extension.

Focus Group

UMass Extension conducted a professionally facilitated focus group with our governor- appointed state advisory board (Board of Public Overseers) to deepen our understanding of our stakeholder priorities and the appropriate roles and methods for UMass Extension.

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
- Open Listening Sessions
- Use Surveys
- Other (Hired Independent Consultants)

Brief explanation.

Identification of Individuals

Internal professional staff members and our advisory boards identified a list of 768 stakeholders who received surveys and were invited to public forum

A team of consultants identified existing and potential faculty partners

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

- Survey of traditional Stakeholder individuals
- Meeting specifically with non-traditional groups
- Survey specifically with non-traditional individuals
- Meeting with invited selected individuals from the general public

Brief explanation

Collecting Input

Web-Surveys

Interviews

Public Forums

Focus Group

3. A statement of how the input will be considered

- To Identify Emerging Issues
- In the Action Plans
- To Set Priorities

Brief explanation.

Extension Planning Teams were established with knowledge and expertise in our eight (8) Critical Issue areas. Team consisted primarily of professional program staff, with some participation by extension administrators and academic faculty. Each team considered the information obtained through the various elements of the Extension Stakeholder Engagement Process as they developed a broad organizational plan (Issue Plan). These Issue Plans were used as the basis for our planned programs in this five-year plan. As such, they identify priorities or key focus areas within each issue. Once priorities were established, teams identified impacts related to these priorities. Impacts are the changes in behavior or knowledge that should occur if the projects that address this issue are to be effective.

In addition to our eight critical issues, stakeholder feedback was also obtained for three areas that Extension has identified as critical, but for which we currently have limited staff capacity. Over the course of this plan, we will explore a range of options for expanding our programming efforts in these emerging issues areas.

1. Name of the Planned Program

Ecosystem Management, Protection And Restoration

2. Program knowledge areas

- 133 25% Pollution Prevention and Mitigation
- 135 25% Aquatic and Terrestrial Wildlife
- 131 25% Alternative Uses of Land
- 136 25% Conservation of Biological Diversity

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

In addition to traditional resources such as water, fisheries, wildlife and forest products, natural systems are valued for open space, aesthetics and recreational opportunities. Ecosystems also provide benefits that are difficult to measure such as climate regulation, nutrient cycling, biodiversity, and the maintenance of environmental quality. Recognition that many of the products we use every day and the drugs used to treat medical ailments were derived from wild or once wild organisms has heightened awareness of the importance of biodiversity. Protection of biodiversity--the sum total of living organisms and the ecosystems that support them--is increasingly being viewed as both an ethical and economic imperative.

Because we know so little about the myriad ecological connections that organize ecosystems into self-sustaining entities, maintaining and restoring the ecological integrity of ecosystems is an essential component of natural resource conservation. With increasing sprawl type of development, ecosystems are threatened by conversion, degradation, and fragmentation. One of the greatest threats to biodiversity and ecosystem integrity, and one of the most difficult to manage, is the impact of exotic pests, diseases and invasive species. The protection and restoration of natural systems and an ecosystems approach to resource management are essential for sustainable human societies.

6. Situation and priorities

UMass Extension is among the many agencies, institutions and organizations that are addressing ecosystem health and protection. Management decisions cannot always wait for a complete understanding of potential impacts without risking the loss of species or communities of species due to inaction. The University can play a critical role in the development and deployment of new approaches and tools based on an evolving understanding of both ecological and human systems.

The University of Massachusetts Amherst possesses a strong academic and research base for addressing various elements of ecosystem management and biodiversity protection. The Department of Natural Resources Conservation contains expertise in wildlife and fisheries conservation, forestry, conservation biology, landscape ecology, forest, wetland, aquatic and coastal ecosystems, and human dimensions of natural resource management. Expertise and research capacity exists in the Department of Landscape Architecture and Regional Planning in the areas of regional land use, watershed and open space planning. The Department of Plant, Soil and Insect Sciences supports research capacity in the area of insect and plant pests/diseases and biological control agents.

UMass Extension has the unique capability of bringing the University's depth and breadth of knowledge and academic resources to bear on critical issues affecting ecosystem health by:

Engaging University faculty and outside partners in the identification of critical issues and priorities for applied research
Conducting integrated research and extension programs as sustained efforts to address critical issues

Using established agricultural, green industry and forestry extension programs to deliver research-based information to individuals whose actions are likely to have a significant impact on Massachusetts ecosystems.

Based on information from our stakeholder input process and an assessment of the University's current research and extension capacity, these are the priorities in Ecosystem Management, Protection and Restoration that we will be addressing over the next five years.

1) Land Protection.

The window of opportunity for effective land conservation in southern New England may be only 10-20 years. After this time, the unprotected landscape is likely to be too fragmented to be of much value for supporting wildlife. Private landowners with an average age of approximately 60 years own 2.2 million acres, over 75% of our state's forests. Within the next 10-20 years much of this land will be passed on or sold. A team of scientists and Extension educators at the University of Massachusetts, Amherst

has developed the Conservation Assessment and Prioritization System (CAPS) to provide an objective, dynamic, and flexible tool and approach for assessing biodiversity value and ecological viability. CAPS is the cutting edge in landscape-based ecological assessment and is unlike any other tools currently available. The implementation of integrated land protection strategies based on CAPS analyses will facilitate more targeted land conservation to effectively preserve biodiversity and maintain ecosystem integrity over time. Conservation organizations and agencies will be more targeted in their land protection efforts and will integrate efforts at various scales. Educating landowners on estate planning and land protection options, especially those in areas identified by CAPS as high priority, will help maintain the public benefit that is derived from these lands. 2) Minimizing and Mitigating Development Impacts on Ecosystems.

Minimizing the impacts of development projects begins with the identification and protection of high-valued ecosystems and directing development to areas of lesser importance. As a quantitative approach for evaluating ecosystem integrity, CAPS can be used to evaluate and compare various development scenarios, such as alternative alignments for highway or utility projects. CAPS can also be used to quantify the indirect impacts of development projects on the surrounding, undeveloped landscape. Design and Best Management Practices can be used to minimize or mitigate impacts on ecosystems. These range from "conservation subdivisions" to the use of appropriate stream crossing structures, wildlife passage structures, and appropriate storm water management systems. A properly conducted habitat evaluation can provide important information that can be used to design projects to minimize impacts to habitat and ecosystems. The University of Massachusetts Amherst has research capacity and expertise in the areas of land use planning and management, conservation subdivisions, wildlife habitat and habitat evaluation, the performance of storm water management techniques and technology, maintaining river and stream continuity through appropriate road-stream crossing design, and mitigating the impacts of roads and highways on wildlife and ecosystems. 3) Land and Resource Management

Working with people who own and manage both land and the resources supported by the land is a critical element of ecosystem management, protection and restoration. UMass Amherst has substantial research capacity in the management of agricultural land and intensively managed landscapes, as well as forest, freshwater and coastal ecosystems. UMass Extension has long maintained programs that provide information and technical assistance to a variety of audiences that work directly with the land and its resources. People who manage natural systems with the primary goal of protecting or restoring the health of ecosystems need up-to-date information on ecosystems and ecological processes, as well as tools and approaches for land protection and management to achieve their goals. Other audiences engaged in the management of natural systems for multiple objectives, including the harvesting of resources as well as the protection of environmental quality, need information on sustainable resource management and best management practices. Land managers that are managing land-based production systems (agriculture) and highly managed landscapes (golf courses) need information on practices that limit the unintended consequences of management practices on nearby natural systems.

4) Avoidance, detection, early containment, and management of exotic pests, diseases, and invasive species

Exotic pests, diseases and invasive species are among the most profound threats to ecosystem integrity that we face. The number of invasive species already creating problems in Massachusetts is large and the potential for future problems is significant. Invasive species typically are habitat generalists and aggressive colonizers and outbreaks are difficult to contain and almost impossible to eliminate unless discovered and addressed early in the invasion. Biological control offers hope for the long-term containment of invasive species. However, careful screening of potential bio-control agents is essential lest the agent itself become a threat to ecosystem integrity. UMass Amherst possesses significant research capacity in the area of insect pests and the development and use of biological control to address the threats caused by these pests. Established agricultural, green industry and forestry extension programs can deliver research-based information to individuals about action that can be taken to avoid, detect and control invasive species.

7. Assumptions made for the Program

To deliver outreach activities for this issue, we will rely on strong relationships that currently exist with many target audiences such as agricultural, landscape and other resource based businesses, conservation organizations, state and federal agencies, and municipal boards. Extension has a valued reputation with these groups.

Relationships exist between Extension field staff and faculty which will be valuable when working on this issue. We assume that faculty not already working with Extension will be willing to engage in applied research that addresses ecosystem management, protection and restoration in Massachusetts and work collaboratively with Extension to create integrated research and extension programs.

Additional staff capacity with particular expertise in invasive species management will be needed to carry out many of the listed activities for this issue. Programming to effectively address the issue of ecosystem management, protection and restoration will also depend on better coordination of efforts within and between Extension programs, as well as an expansion of our relationships with faculty and integration with research.

This issue has great potential for grant funded activities. Collaborative efforts between Extension staff and faculty will result in better opportunities for grants to be funded. Strong interest among our stakeholders and partners in workforce training and

preparation is likely to create opportunities for revenue based programming related to this issue.

Through the faculty and staff in the natural resource program and agriculture and landscape program we have expertise to provide accurate information on the nature of this issue. In addition we have well established networks of Extension and other university resources in agriculture and the green industry, forestry, wildlife and fisheries conservation in New England and across the country.

Public attitudes in Massachusetts will continue to attribute a high value to the protection of land and biodiversity. Given the strong regulations in Massachusetts protecting wetlands and endangered species, people will be motivated to change practices that concern this issue. Extension programs provide unbiased, research based information that will serve as catalyst for change in practices affecting this issue.

Currently a handful of Extension staff work in the area of ecosystem management, protection and restoration. Through their relationships with faculty and external collaborators and participation in professional associations these staff will continue to develop necessary knowledge and skills to operate on the cutting edge of this issue.

8. Ultimate goal(s) of this Program

1. Enhanced Health And Productivity Of Natural Resources And Ecosystems - The quality of land, water, plant, animal, and biodiversity resources will be protected and enhanced, and healthy self-sustaining ecosystems maintained.
2. Stronger Local Economies - Natural and human resources will be managed or cultivated in ways that support strong local economies.

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	4.1	0.0	0.0	0.0
2008	4.0	0.0	0.0	0.0
2009	4.0	0.0	0.0	0.0
2010	5.0	0.0	0.0	0.0
2011	5.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Activities with Direct Contacts

- Farm/site/office visits
- Field days
- Meetings

- Educational/training workshops and seminars
- Non-degree courses
- Demonstration projects
- Technical services
- E-mail
- Telephone calls

Activities with Indirect Contacts

- News letters
- Web sites
- Educational technology (CDs, DVDs, podcasting)
- Fact sheets
- Technical reports

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts)

15. Description of targeted audience

Natural Resource Agencies
 Regional Planning Authorities
 Development and Planning Agencies
 Municipalities
 Conservation Organizations
 Landowners and Land Managers
 Business/Industry (Natural resource based businesses, development industry, environmental consultants)

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	1646	2916	19	0
2008	1646	2916	19	0
2009	1646	2916	19	0
2010	1646	2916	19	0
2011	1646	2916	19	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 21 2008: 21 2009: 21 2010: 21 2011: 21

Output Target

Workshop series or educational course

2007: 84 2008: 84 2009: 84 2010: 84 2011: 84

Output Target

Facilitated Group Meetings or Conferences

2007: 23 2008: 23 2009: 23 2010: 25 2011: 25

Output Target

Demonstration Projects

2007: 4 2008: 4 2009: 4 2010: 4 2011: 5

Output Target

Other personalized interventions or services

2007: 90 2008: 90 2009: 90 2010: 90 2011: 90

Output Target

Printed material (Newsletter, Manuals, Fact sheets, Calendars)

2007: 32 2008: 32 2009: 32 2010: 32 2011: 32

Output Target

Websites

2007: 11 2008: 11 2009: 11 2010: 11 2011: 12

Output Target

Other Computer or web-based Based Delivery (CDs, DVDs, Pod casts)

2007: 9 2008: 9 2009: 9 2010: 10 2011: 10

Output Target

Displays

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of agencies, organizations and communities that will implement strategic land conservation programs that protect natural resources and ecosystems

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of development projects that will minimize impacts on wildlife populations and ecosystems

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 6 2011: 6

Outcome Target

Number of municipal boards, state and federal regulators that will effectively address natural resource issues during project review and permitting processes

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of natural resource-based businesses will adopt sustainable resource management approaches

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of natural resource-based businesses that will adopt environmental best management practices

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of land managers that will implement practices that maintain a diversity of natural communities and restore degraded ecosystems

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of agencies and organizations (or natural resource professionals) that will implement environmental health monitoring for the early detection of exotic pests, diseases and invasive species

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Percentage of participants that will select products that reduce risk of invasive species

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Number of well-screened bio-control agents that will be developed and deployed to control invasive species and protect native organisms and ecosystems

Outcome Type: Medium

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

Outcome Target

Percentage of participants that will implement integrated management strategies to contain and manage exotic pests, diseases and invasive species

Outcome Type: Medium

2007: 30

2008: 30

2009: 35

2010: 35

2011: 40

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 Programmatic Challenges

Description

- Changes in base funding available to maintain core capacity within UMass Extension to address this issue
- Departmental, College and University priorities affecting the number and expertise of faculty available to address this issue
- Political transitions that affect the availability of grants and contracts
- Changes in state or federal agency priorities that affect the availability of partners and collaborators
- Changes in economic conditions that alter the pattern of land development in Southern New England
- Changes in tax policy that either reduces or increases economic pressures affecting working landscapes
- Economic viability of working forestry and wood products industry in Massachusetts affecting both the rates of land conversion and the ability to manage conservation land
- Changes in the demand for forest products, including markets for lumber, firewood, and biomass energy that could change the extent and nature of timber harvesting in Massachusetts.
- Changes in shellfish markets, propagation, or harvesting techniques
- Occurrence of new exotic pests, diseases, or invasive species with exceptionally high environmental or economic impacts
- Changes in local, state and federal regulations
- Unforeseen changes in technology that significantly affects our ability to manage ecosystems or communicate with target audiences

21. Evaluation studies planned

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

Description

Extension faculty and staff will evaluate the impacts of programs through a variety of methods, including:

Program evaluations

Follow up surveys of program participants

Research to establish benchmarks and evaluate changes in knowledge, skills, actions taken or environmental conditions due to programming efforts

Participatory research

To the extent possible we will evaluate the changes in conditions or actions taken in response to Extension programs. Where this is not possible we will evaluate the educational outcomes of our programs and use reasonable assumptions and other research findings to estimate the impacts of our programs.

22. Data Collection Methods

- Sampling
- Whole population
- Mail
- On-Site
- Case Study
- Other (web-surveys)

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Food Production

2. Program knowledge areas

- 604 20% Marketing and Distribution Practices
- 216 20% Integrated Pest Management Systems
- 204 20% Plant Product Quality and Utility (Preharvest)
- 112 20% Watershed Protection and Management
- 601 20% Economics of Agricultural Production and Farm Management

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

The capacity to produce food locally is an important component of our quality of life and food security; it fosters sustainable, land-based economic development and reduces transportation-related energy consumption. Maintaining food production capacity includes viable and sustainable agriculture, commercial fishing, shellfish harvesting, maple sugaring, as well as the maintenance of agricultural land whether or not it is currently being used to produce food.

6. Situation and priorities

Since 1997, the overall number, acreage and cash receipts of Massachusetts farms have declined (by 17%, 10% and 21% respectively). Of the remaining farms (more than 6,000), 80% are still family owned and most of these fit the definition of 'small farms' as expressed by the US Department Agriculture. Massachusetts is the third most densely populated state and loses about 40 acres per day to development. Given this pressure on farmland, it is not surprising that Massachusetts ranks fourth in the United States for farmland value at \$9, 234 per acre and also for net income per acre at \$327.

Farmers in Massachusetts invest nearly \$212 million statewide on farm inputs such as feed, seed, livestock, fertilizer, electricity and fuel. Agriculture generates \$21 million in income tax revenue annually in Massachusetts. Massachusetts farms employ nearly 5,000 year-round and more than 9,000 seasonal workers and paid \$81.6 million in wages in 1997.

The average farm in Massachusetts is only 85 acres. Farmers therefore need to manage for high returns on their investment per acre. Aside from traditional agricultural products, Massachusetts farmers have expanded their offerings to include farmstead-made cheeses, maple syrup, wine, cranberries and exotic livestock, which together present tremendous, statewide financial growth potential.

Aquaculture in Massachusetts is comprised predominantly of the cultivation of shellfish. Overall, nine species of shellfish and 15 species of finfish are cultivated in the state. According to the 2002 USDA Census of Agriculture, aquaculture ranked tenth within Massachusetts in terms of revenue with nearly \$9.5 million in sales of products cultivated at 140 farms.

Farms and other food production operations can add significantly to the quality of life in Massachusetts and New England. The most obvious contribution is to open space through their scenic and historic vistas, but it is also well known that regular consumption of fruits, vegetables, meat, and dairy products leads to better human health.

Within this context, the UMass Extension Program will focus its research and outreach capacities in the area of Food Production on the following priorities over the next five years:

1) Maintain and Improve Environmental Quality through Integrated Crop and Animal Management

For farmers and other food producers to stay in business, it is necessary that they maintain long-term environmental sustainability by striving to expand species diversity and better understand farm ecology. UMass Extension can provide access to current research information on new and alternative species and varieties, advanced horticultural management techniques, pest-ecology, and pest-management procedures. Important studies of pest ecology and control techniques provide approaches to pest management that optimize pest control, reduce chemical use, and increase crop and animal quality.

2) Provide Resources to Maintain or Improve the Economic Sustainability of Agriculture

We are facing intense global competition for the products that are grown or produced in Massachusetts. Improved production

efficiency, new marketing opportunities, and constant evaluation of profitability are needed to ensure survival. Farmers and other food producers must have ready access to current research information on marketing, post-harvest efficiencies, packaging and business management strategies. In addition, research programs in the physiological management of crops and animals can give food producers the tools that are necessary to increase production efficiency while enhancing crop and animal quality.

3) Increase Purchases and Consumption of Locally Grown Foods by Individuals, Communities, and Institutions

It is clear that a diversity of fresh, high-quality foods (fruits, vegetables, meat, dairy and poultry products, shellfish, syrup) that are available to the consumer results in higher levels of consumption. Such products also provide a buffer from competing globally imported products. New varieties, new crops, and improved production, handling, and local marketing practices will give food producers a means of enhancing crop and animal quality and therefore consumption. For example, commercial wine and table grape production offers Massachusetts farmers a high-value crop with unique, local appeal. Existing vineyards primarily sit along New England's southeastern coast, but this activity may be expandable to inland Massachusetts. Enhanced understanding of grape production in a cooler climate, along with its relationship to wine quality, will give critical information to farmers exploring the possibility of expanding into this profitable aspect of agriculture. UMass Extension will collaborate with a variety of stakeholders to expand farm-to-institutions (e.g., food banks, colleges, schools) opportunities for use of locally grown food products.

7. Assumptions made for the Program

This plan is based on a set of general assumptions that will help to ensure success.

Extension staff has the knowledge, skills, and abilities to address the majority of these issues. Extension staff and College faculty continue to develop new information that will further enhance and refine this knowledge. Farmers and other stakeholders understand that Extension provides accurate and timely information necessary to improve the pest management, nutrient management, marketing, and overall farm management abilities of farmers

Farmers and other stakeholders are or will be motivated to adopt changes that will continue to insure the success of Massachusetts agriculture.

3. Positions are needed to fully implement the plan

A. Faculty/Staff with Farm Management and Marketing expertise are needed to implement this plan. In order for farmers to take advantage of new and expanding markets and to remain competitive, financial planning and marketing initiatives need to be implemented and coordinated to ensure success. This person will work closely with other government agencies (e.g. Mass. DAR) and non-profits (e.g. CISA, Red Tomato) to coordinate activities. The focus of this position would be to implement farm management planning and marketing activities that compliment current research and extension activities by UMass Extension. This position would also support the farm to institution/school/college marketing development.

B. Faculty/Staff to work with new farmers are needed to implement this plan. The long-term viability of agriculture in Massachusetts depends on new generations of people who want to farm and have access to the resources necessary to be successful. There are clearly people in the state and region who are interested in farming commercially and there are many resources that UMass Extension provides that can be utilized by these new farmers. This position will work directly with people starting out in farming and coordinate the extension of existing resources to these individuals. This person will coordinate with other entities (e.g. Mass DAR, FSA, NRSC, New England Small Farm Institute, and the New Entry Sustainable Farming Project) to assist people with all aspects of commercial farming. This person will also contribute to the sustainable agriculture undergraduate curriculum at UMass to target educational programs to new and prospective farmers.

8. Ultimate goal(s) of this Program

1. Stronger Agriculture and Food Systems - Develop and expand systems for environmentally sound and economically viable food production, distribution, access and utilization.

2. Stronger Local Economies - Natural and human resources will be managed or cultivated in ways that support strong local economies.

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	5.3	0.0	0.0	0.0
2008	5.0	0.0	0.0	0.0
2009	5.0	0.0	0.0	0.0
2010	5.0	0.0	0.0	0.0
2011	5.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Most activities involve farmer education through written and electronic materials (manuals, newsletters, faxes, emails, web pages). In addition, educational sessions and conferences, on-farm meetings, and face-to-face discussions are used.

Managing the food security issue will involve collaborative efforts among farmers, community based organizations such as food banks and food pantries, and human service agencies that assist low-income families. This, most likely, will be in the form of a face-to-face meeting and combined efforts to pursue external funding to support such an endeavor. It is recommended that such an approach be piloted in specific region of state, such as western MA before it becomes a statewide initiative.

Managing the farm to school initiative will also involve collaborative efforts among schools, the agricultural community and local community based organizations such as CISA, to determine how local produce is currently being distributed and strategies for increasing its utilization.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts))

15. Description of targeted audience

The primary audience for this plan is food producers and food production-related organizations. This not only includes those that are well-established, but also those that are new, immigrant, and part-time. Both conventional and organic food producers are included. Others include government agencies (including schools and institutions), non-profits, community based organizations, such as food pantries, food banks, that provide food to low-income families, and the public (including low income and urban).

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	4952	13265	55	0
2008	4952	13265	55	0
2009	4952	13265	55	0
2010	4952	13265	55	0
2011	4952	13265	55	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 15 2008: 15 2009: 15 2010: 15 2011: 15

Output Target

Workshop series or educational course

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

Output Target

Facilitated Group Meetings or Conferences

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

Output Target

Demonstration Projects

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

Output Target

Diagnostic Services

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

Output Target

Site visits

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

Output Target

Other personalized interventions or services

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

Output Target

Printed material (Newsletter, Manuals, Fact sheets, Calendars)

2007: 58 2008: 58 2009: 58 2010: 58 2011: 58

Output Target

Websites

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

Output Target

Other Computer or web-based Based Delivery (CDs, DVDs, Pod casts)

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

Output Target

Displays

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Percentage of participants that will adopt research-based Best Management Practices related to water, soil, air, and integrated crop and animal management practices

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will adopt practices that lower their risk from and exposure to pesticides and fertilizers

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will improve production efficiencies through education, technology transfer, and by adopting new and innovative practices

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will increase profitability through improved post harvest efficiencies, packaging, and marketing techniques

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will pursue a broader range of sales and marketing opportunities

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Number of stakeholders that will expand access to and reliance on local foods by individuals and families and institutions through collaboration, education, expanding retail opportunities, and donations

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

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

Food production is strongly influenced by economic factors. Food production is also based on living organisms and ecosystems. Nearly all outcomes therefore are determined in part by a range of external issues that include (but are not limited to):

- Weather conditions
- Consumer preferences
- Economic factors. That influence the cost associated with production and distribution. (Currently, the cost of fuel is the most prominent among these)
- Diseases and other invasive threats (and our ability to manage and contain them) are also important external factors

21. Evaluation studies planned

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

Description

Extension staff will use grower feedback, surveys, attendance at meetings, subscriptions to newsletters and Guides, web site hits, and other measures to assess changes in the environmental sustainability, marketing improvements, and profitability of farmers. Within the designated geographic area, develop an assessment tool to (a) determine current number of farm stands that provide an x amount of food for local food pantries, food banks, etc; (b) determine usage of food vouchers at local farm stands and farmer's markets; (c) determine current numbers of low-income families that access local farm stands and farmer's markets. Replicate same assessment tool one year later to determine if changes have occurred.

22. Data Collection Methods

- Sampling
- Whole population
- Structured
- Unstructured
- Case Study

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Food Safety

2. Program knowledge areas

- 723 30% Hazards to Human Health and Safety
- 711 10% Ensure Food Products Free of Harmful Chemicals, Including Residues from Agricultural and Other Sources
- 712 60% Protect Food from Contamination by Pathogenic Microorganisms, Parasites, and Naturally Occurring Toxins

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

In spite of recent declines in the illness caused by a few of the food borne pathogens, food borne illness continues to plague Americans, costing the U.S. economy billions of dollars each year in lost productivity, hospitalization, long term disability and death. The Centers for Disease Control have estimated that food borne diseases cause approximately 76 million illnesses and 5,000 deaths each year. Federal agencies have instituted food safety education and regulatory programs from farm to table. The US Department of Agriculture, the US Food and Drug Administration and industry have provided guidelines and a variety of resources for food producers and processors using the Hazard Analysis Critical Control Point (HACCP) system targeted at meat and poultry producers and processors and retail food establishments. Retailers and food handlers in food service settings are often required to undergo manager certification. The Child Nutrition Reauthorization Act of 2004 now requires all schools to implement HACCP plans. Despite these efforts, the incidence of food borne illness remains a problem. Therefore education is needed to improve food safety knowledge and practices of people involved in all sectors of the food system.

6. Situation and priorities

1) Teaching Consumers to Prevent Food-Borne Illness in Their Homes

CDC Surveillance data from 1997 show that about 23.5 % of food borne disease that can be traced to a place where the food was eaten occurs within private homes, while 45% occurs in restaurants and delicatessens. However, CDC also points out that all cases of food borne illness tend to be underreported, and those occurring in homes are more likely to be underreported than those occurring in restaurants. Several population groups, including older adults, young children, pregnant women, and immuno-compromised persons, are at especially high risk for food borne illness. In addition, The Center for Food Safety and Applied Nutrition (CFSAN) within the US Food and Drug Administration identifies food allergens as a major issue in their efforts to ensure food safety

2) Teaching Teachers and Students the Principles of Food Safety and Food Equipment Safety

It is estimated that 28% of 15-year-olds and 42% of 16-17-year-olds are employed. In a study conducted by Dunn et al. (1998), 21% of employed teens aged 14-17 said they had worked in a fast-food restaurant, 19% in another type of restaurant, 17% in a grocery store, and 6% in a day care center. Similarly, 24% had been employed as dishwashers, 21% as cooks, 18% as grocery bagger or stockers, 15% as busboy or busgirls, 12% as waiters, and 8% as child care workers (other than babysitters). Besides being in positions of handling foods or being potential carriers of foodborne illness, these teens are also at risk of injury. In Dunn's study, the proportion of respondents missing work or school for at least one day was 29% due to cuts, 24% due to burns, 12% due to falling or slipping, and 10% due to heavy lifting. These injuries are characteristic of risks in food industries. Other investigators have found similar results. In an analysis of age-related differences in work injuries, Breslin et al., (2003), found that adolescent and young adult lost time claims in the service industries were 27.86/1000 FTEs and 26.68/1000 FTEs respectively. Rates for males were roughly twice the rates for females. For adolescents, 79% of these claims were in the retail trade and accommodation, food, and beverage service sectors. As a result of these and other data, the National Institute for Occupational Safety and Health (NIOSH) has released alerts advocating more training and preparation for adolescents in the workplace.

3) Providing Effective Food Safety Education to Food Service Workers, Especially Low-Literacy Groups

Because many jobs in food service or the food industry pay low wages, employees are often less well educated or speak English as a second language. UMass Extension, with expertise in both food safety and communications, is uniquely positioned to produce educational materials in a variety of languages and for a range of literacy levels. This focus is consistent with priorities identified in a survey of stakeholder conducted by UMass Extension in spring of 2006.

4) Food Bio-Security

UMass Extension will be poised to consider applying for food bio-security funds if state/local needs are identified and funding becomes available.

7. Assumptions made for the Program

In this plan, we are making the following assumptions:

There will be no sudden, dramatic change in food safety issues over this planning period. If a new outbreak of food-borne illness should occur, or if there is a homeland security threat involving our food supply, plans may shift accordingly.

UMass Extension and the Department of Nutrition will be successful in recruiting and hiring an Assistant Professor and Food Safety Specialist who will a) focus on these identified needs, and b) secure funding support for research and outreach programs in these areas.

Funding will continue to be available from USDA, the Massachusetts DOE, and other sources to help support food safety programs in MA.

University Outreach and Extension are willing to help support work in this issue as part of their strategic planning and investment.

Staffing levels are stable (indicating continued support from EFNEP and FNP).

Staff will continue to deliver food safety education through EFNEP and FNP.

Staff will measure food safety program impacts.

8. Ultimate goal(s) of this Program

Improved Human Health and Well-being - Diverse youth, families, and communities will achieve greater physical and social well-being.

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	4.5	0.0	0.0	0.0
2008	6.0	0.0	0.0	0.0
2009	6.0	0.0	0.0	0.0
2010	6.0	0.0	0.0	0.0
2011	6.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Workshops (includes train-the-trainer workshops and workshop series)

Printed materials (includes materials printed specifically for low-literacy and non-English-speaking groups)

Online resources

curriculum

Collaborations

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts))

15. Description of targeted audience

High-risk consumers, including older adults, parents of young children, pregnant women, and immuno-compromised persons
 Family members and individuals who provide care to these audiences.
 Teachers
 Food service staff and other food handlers (such as workers in soup kitchens or food pantries)
 Food producers
 Other professionals working in food safety (through collaborations and networks)
 Youth

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	9577	12863	0	0
2008	9577	12863	0	0
2009	9577	12863	0	0
2010	9577	12863	0	0
2011	9577	12863	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 100 2008: 100 2009: 150 2010: 150 2011: 200

Output Target

Workshop series or educational course

2007: 100 2008: 100 2009: 150 2010: 200 2011: 200

Output Target

Facilitated Group Meetings or Conferences

2007: 2 2008: 2 2009: 2 2010: 2 2011: 2

Output Target

Demonstration Projects

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

Output Target

Other personalized interventions or services

2007: 40 2008: 40 2009: 50 2010: 50 2011: 60

Output Target

Printed material (Newsletters, Manuals, Fact sheets, Calendars)

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

Output Target

Displays

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

Output Target

Websites

2007: 2 2008: 2 2009: 2 2010: 2 2011: 2

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Percentage of participants that will increase their knowledge of safe food handling

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants that will handle foods more safely

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will gain knowledge and skills in avoiding food allergens

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants that will avoid foods that cause them to have allergic reactions

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will increase their personal knowledge of food safety

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants that will teach principles of food safety in their science classrooms

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will increase their knowledge of basic food safety principles

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants that will handle foods more safely

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants entering food industries that will handle foods and equipment more safely

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants receiving food safety training, including individuals with language or literacy barriers, that will increase their knowledge and skills in safe food and equipment handling

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants who receive food safety training, including individuals with language or literacy barriers, that will handle foods and equipment more safely

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

20. External factors which may affect outcomes

- Natural Disasters (drought, weather extremes, etc.)
- Economy
- Appropriations changes
- Public Policy changes
- Competing Public priorities
- Competing Programmatic Challenges

Description

New food safety leader chooses different projects or outcomes.
State and federal funding diminish.
Grants are not funded.
Staff levels are insufficient to provide these services.
Faculty and staff over-extended with current work load.
Collaborations and networking fail (i.e., we are not able to recruit partners).

21. Evaluation studies planned

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

Description

§ Pre- and post-surveys
§ Self-report
§ Qualitative data collection (interviews or focus groups)

22. Data Collection Methods

- Whole population
- On-Site

Description

{NO DATA ENTERED}

1. Name of the Planned Program

General Operations and Administration (Administrative Plan)

2. Program knowledge areas

- 902 50% Administration of Projects and Programs
- 903 50% Communication, Education, and Information Delivery

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

The UMass Extension administrative unit provides organizational leadership and direction for all educational programs and projects. It provides oversight for the hiring, supervision of staff and supports staff delivery of educational programs in four program areas: 4-H, Natural Resources and Environmental Conservation, Agriculture and Landscape and Nutrition Education. Extension Administration initiates the required research, participatory decision-making and planning appropriate for the development of policies, work processes and strategic initiatives, and is accountable for the management and cultivation of resources, the improvement of operations, conduct of communications, evaluation of educational programs, reporting, and the conduct of relations with the public and the University community. It holds responsibility for legal, risk and policy compliance and enforcement as directed by the University, the state of Massachusetts and USDA/CSREES in carrying out Extension's identified mission and that of its programs.

6. Situation and priorities

The main priorities that are addressed in our General Operations and Administration Plan are:

Support the organization's educational mission through program support administrative services and multi-state work
Provide information, guidance and services to staff, faculty, policy makers, internal and external stakeholders
Maintain, communicate and follow mandated laws, regulations, policies and reporting procedures from the state, the federal government and the University
Effectively and strategically lead and manage the organization's fiscal and staffing resources and cultivate its assets
Promote ease of access to Extension programs and service delivery for diverse communities and individuals throughout the Commonwealth

7. Assumptions made for the Program

Extension retains current levels of administrative staff to support programs and services.

Extension retains level funding from the federal government, the legislature, the University

Extension obtains required levels of support from centralized Outreach administrative units.

8. Ultimate goal(s) of this Program

Extension staff and faculty, receive administrative support to assist them in developing and delivering quality Extension educational programs and services

Staff and external partners obtain accurate and timely research and evaluation data and reports on Extension educational programs and activities to guide decision making and policy formation and demonstrate legal compliance and accountability

Partnering organizations, agencies, non-profits and volunteer groups are linked to Extension through clear legal and liability agreements, management and affirmative action/equal opportunity policies approved by the University and in accordance with Massachusetts and federal laws.

Staff and external partners receive fiscal accounting services and reports demonstrating that Extension's financial resources are lawfully administered and used for strategic priorities supporting the organization's mission

Diverse community members have equal access to information about and opportunities to participate in Extension programs and services

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	9.6	0.0	0.0	0.0
2008	8.0	0.0	0.0	0.0
2009	8.0	0.0	0.0	0.0
2010	8.0	0.0	0.0	0.0
2011	8.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Financial Management, includes federal and state grants, gifts, accounts, program budgets, revenue generation/fees, trust accounts, salary administration, etc. in conjunction with the Outreach Business Services Center and the UMass Treasure's Office.

Human Resource Management, includes the hiring, supervision and evaluation of professional and clerical staff and faculty, administration and communication of University HR employment policies and procedures, including performance management, civil rights, grievance and salary administration.

Legal, Risk and Volunteer Management, includes legal, liability, and volunteer policy development and research; consultation with University attorneys, risk officers and state officials; communication and enforcement of University directives and policies; creation of binding agreements (MOA's), negotiations and mediations with collaborating non-profits and governmental agencies; emergency and incident reporting; Criminal History Systems Information (CORI) screening, authorization, and investigations for all Extension youth programs; ES-237 reporting; Volunteer advisory fiscal reporting, administrative systems design and delivery.

Internal and External Relations, includes conduct of public relations with University, state, federal officials, the legislature, the Board of Public Overseers, other state Extension programs within CSREES, stakeholders and collaborating organizations, internal and external audiences in the areas of advocating for strategic initiatives and program delivery.

Program Assessment and Evaluation, includes the design of program assessment instruments, surveys, impact analysis, studies, statistical reports pertaining to Extension programs' delivery, impacts and stakeholder issues.

Marketing and Communications, in conjunction with Outreach Marketing and Communications, includes the development of brochures, newsletters, media, publications, Book Store, web communications, and information systems and data management.

Fundraising and Grant Program Development, includes oversight and coordination of grants, internal and external partnerships and special fundraising programs, relations with Extension related program foundations, working where appropriate in conjunction with Outreach Development, Advancement, federal and state agencies and the appropriate University offices.

Planning, Evaluation and Reporting includes general design and support for program planning, evaluation and reporting as well as comprehensive evaluation services for projects with substantial evaluation requirements from external sponsors and general advice and capacity building

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● One-on-One Intervention ● Other 1 (Administrative processes) 	<ul style="list-style-type: none"> ● Web sites ● Other 1 (Administrative Processes)

15. Description of targeted audience

University Administrators
 Federal and County Extension Program Administrators (USDA/CSREES)
 UMass Extension Faculty and Staff
 Public Stakeholders

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	0	0	0	0
2008	0	0	0	0
2009	0	0	0	0
2010	0	0	0	0
2011	0	0	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Administrative Processes

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Extension staff and faculty, receive administrative support to assist them in developing and delivering quality Extension educational programs and services

Outcome Type: Medium

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

Outcome Target

Staff and external partners obtain accurate and timely research and evaluation data and reports on Extension educational programs and activities to guide decision making and policy formation and demonstrate legal compliance and accountability

Outcome Type: Medium

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

Outcome Target

Partnering organizations, agencies, non-profits and volunteer groups are linked to Extension through clear legal and liability agreements, management and affirmative action/equal opportunity policies approved by the University and in accordance with Massachusetts and federal laws.

Outcome Type: Medium

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

Outcome Target

Staff and external partners receive fiscal accounting services and reports demonstrating that Extension's financial resources are lawfully administered and used for strategic priorities supporting the organization's mission

Outcome Type: Medium

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

Outcome Target

Diverse community members have equal access to information about and opportunities to participate in Extension programs and services

Outcome Type: Short

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

Outcome Target

Internal and diverse external partners are accurately informed and involved in Extension programs, services, planning for strategic initiatives and impact assessment

Outcome Type: Medium

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

20. External factors which may affect outcomes

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

Description

Organizational restructuring within the University
 Decreases or increases in state and federal funding
 Competition for grant funding
 Natural disasters
 Societal and demographic change
 Evolving information technologies
 Changing legal, risk, political and economic environments
 Degree of support from Outreach administrative services for key Extension needs in marketing, communications, public relations, information technology, fundraising and development
 Changes in partnership agreements with non-profits, foundations, volunteer groups, county Extension programs
 Lack of adequate staffing or ability to hire and retain diverse staff
 Emergence of issues requiring new Extension programs and priorities

Ability to obtain funding to develop Extension outreach infrastructure and programming for diverse, underserved populations

21. Evaluation studies planned

- Retrospective (post program)
- Before-After (before and after program)
- During (during program)
- Case Study
- Other (Fiscal, Legal Liability Audits)

Description

UMass Extension Administration will conduct evaluation studies in the following assessment areas:

Civil Rights compliance,
Staff Performance Management Needs analysis,
Legal & Liability issues re: Partnerships,
Volunteer Management,
Grant and fundraising effectiveness,
Financial projections and performance,
Advisory Group Effectiveness,
Program Participation Diversity and Access,
Multi-state Consortia Collaborations,
Extension Cross-functional Issues Team Effectiveness.

Major prerequisites in the aforementioned areas include on-going structural planning needed to set standards and delineate measurable objectives by involving constituents or staff in participatory needs assessment, goal setting and decision making, as appropriate.

22. Data Collection Methods

- Whole population
- Mail
- Telephone
- On-Site
- Structured
- Unstructured
- Case Study
- Observation
- Portfolio Reviews
- Other (Focus Groups, Civil Right Review)

Description

Internal Civil Rights Review
Partnership Memoranda of Understanding reviews
Volunteer Management Case File Review
Multi-State Consortia Progress Reports
Needs Assessments
Fiscal Audits
Program Comparison Studies of Performance Reviews Accomplishments with Strategic Plan objectives
Grant Funder Evaluations
Advisory and Partnering Organization Feedback
Records Review
Focus Groups
Pre/post surveys
Formal Measurement of Public Relations and Marketing Effectiveness
Evaluation of degree of Plan of Work Goal Achievement
Assessment of Public Notification Plan effectiveness

1. Name of the Planned Program

Health Promotion and Disease Prevention

2. Program knowledge areas

- 724 40% Healthy Lifestyle
- 704 20% Nutrition and Hunger in the Population
- 703 40% Nutrition Education and Behavior

3. Program existence : New (One year or less)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

Making adjustments to adopt healthy behaviors such as eating nutritious food, being physically active, preventing sexually transmitted diseases, avoiding substance abuse and having regular health screenings can lead to a longer and more productive life; it can also prevent the harmful effect of many chronic diseases. Creating healthy behaviors during childhood is extremely important for future health.

Chronic diseases such as heart disease, diabetes, and cancer are the leading causes of disability and death in the United States. Although chronic diseases are among the most common and costly, they are also among the most preventable.

Overweight and obesity have reached epidemic proportions in the U.S, affecting not only adults but also children and adolescents. Lack of physical activity contributes greatly to this health problem. Overweight, obesity and lack of physical activity increase the risk of heart disease, diabetes, stroke, hypertension, and some cancers.

Youth health - Areas of concern include: obesity, physical activity, alcohol and drug use, tobacco use, sexual behavior, asthma, injuries and violence.

Women's health - Areas of concern include: cancer, obesity, diabetes, physical activity, reproductive health, osteoporosis, and violence.

Health disparities - Healthy People 2010 has as one of its goals eliminating racial and ethnic disparities in health. The ethnic minority populations experiencing disparities include: African Americans, Alaska Natives, American Indians, Asian Americans, Hispanic Americans, and Pacific Islanders.

6. Situation and priorities

"Adopting healthy behaviors can control and prevent the devastating effects and cost of many diseases. There is a public need for educational programs that reduce the health and economic consequences of the leading causes of disability and death and ensure a long, healthy and productive life for all members of society." 1

The following are Extension priorities for Health Promotion and Disease Prevention in Massachusetts:

Priority #1. Prevent Obesity through Healthy Eating and Physical Activity: Deliver educational programs to address obesity prevention (healthy diets, physical activity).

Obesity in U.S. has reached epidemic proportions. Thirty-two percent of American adults are obese (BMI at or above 30) and 16% of children and adolescents aged 6-19 years are overweight (BMI at or above the 95th percentile based on the 2000 CDC Growth Charts). In Massachusetts, there has been a 60% increase in the prevalence of adult obesity since 1990. 2 Obesity is linked to increased risk for a variety of chronic diseases and conditions, such as diabetes, heart disease, and some types of cancers.)1 In

The Healthy People 2010 goal is to reduce the percentage of obese adults to 15%. As of 2004, 18.4% of Massachusetts adults were obese, compared with 21% nationally during 2003. 3, 4 The combined rate of overweight and obesity in Massachusetts for 2002 was 54.5% of adults (2004), versus 56.0% nationally (2003) (statehealthfacts and 2004 BRFSS). Overweight and obesity cost Massachusetts an estimated \$1.8 billion in 2003. At the current rate of increase, overweight and obesity will soon surpass smoking as the greatest cause of early death in the state. 5

One factor contributing to rates of obesity and other chronic diseases is a lack of physical activity. Besides helping to control weight, regular physical activity reduces the risk of coronary heart disease, hypertension, diabetes, stroke, and some types of

cancers. Physical activity also strengthens bones, muscles, and joints, reduces symptoms of anxiety and depression; and is associated with fewer physician visits, hospitalizations, and medications. 1

More than 50% of American adults do not get enough physical activity to provide health benefits; 25% of adults are not active at all. In general, activity decreases with age, especially among men. 1 Physical inactivity is not limited to adults only – more than a third of adolescents in grades 9-12 do not regularly engage in vigorous-intensity physical activity. High school participation in daily physical education classes dropped from 42% in 1991 to 32% in 2001, and the trend continues. 1

The Healthy People 2010 physical activity goal is for at least 80% of adults in the state to engage in some form of leisure time physical activity.3 In Massachusetts, only 17% of adults and 62% of adolescents report regular engagement in vigorous physical activity. 6

Priority # 2 – Prevent Chronic Diseases: Engage Massachusetts families in educational programs to address prevention of chronic diseases associated with poor diet and physical activity (heart disease, stroke, diabetes, hypertension, some types of cancer).

Cardiovascular Diseases (CV) including Heart Disease, Stroke, and Hypertension. Heart disease is the leading cause of death for both men and women in the United States; stroke ranks third. Nearly 40% of all annual deaths are attributed to CV (approximately 1 death every 35 seconds). Currently, more than 70 million Americans live with some form of CV; coronary heart disease is a leading cause of premature and permanent disability in the U.S. work force.

High blood pressure and high blood cholesterol levels are two of the major independent risk factors for developing some form of CV. Other important risk factors include overweight and obesity, physical inactivity, diabetes, tobacco use, and stress. 1 Heart disease is the leading cause of death among Massachusetts residents. The death rate from heart disease in 2002 was 202.3 deaths per 100,000. 7

Diabetes. The number of people in the United States with diagnosed diabetes has more than doubled in the last 15 years, reaching 14.6 million in 2005. One in five adults over age 65 has diabetes. African American, Hispanic, American Indian, and Alaska Native adults are twice as likely as white adults to have diabetes. More than 20.8 million Americans have diabetes; 6.2 million are not aware they have the disease. An estimated 41 million Americans aged 40-74 years have pre-diabetes with elevated blood sugar levels, but not sufficiently to be diagnosed as diabetes. 1 Diabetes can lead to a variety of other health problems including heart disease, stroke, blindness, kidney failure, pregnancy complications, and lower-extremity amputations. 1

In Massachusetts, 4% of adults (approximately 196,000) have been diagnosed with diabetes. Adjusting for age and gender, racial and ethnic minorities were about twice as likely as whites to develop diabetes. Individuals with income below \$15,000 were three times as likely as those with income of \$35,000 or higher to develop diabetes. 7

Cancer. Cancer is the second leading cause of death in the United States. In 2002, more than 557,000 Americans died of cancer and more than 1.24 million Americans were diagnosed with the disease.1

Among Massachusetts residents, there were 171,729 newly-diagnosed cases of cancer and 69,298 deaths from cancer between 1998 and 2002.7 Lung cancer caused the most deaths, resulting in nearly 30% of cancer deaths among men and 25% of cancer deaths among women. However, lung cancer ranked second in newly-diagnosed cancers. Prostate cancer was the most common newly-diagnosed cancer among men (30% of new cancers among males), and breast cancer was the most common type of newly-diagnosed cancer for women (31% of new cancers among females).7 Colon/rectal cancer was the third most frequent newly-diagnosed cancer in Massachusetts. Non-Hispanic Blacks had highest rates of mortality among Massachusetts racial/ethnic groups.

Overall, age age-adjusted cancer incidence rates in Massachusetts were higher than national rates. The Massachusetts male and female incidence rates from 1998-2002 were 620.0 per 100,000 and 459.0 per 100,000, respectively, while the rates for the North American Association of Central Cancer Registries (NAACCR) were 566.1 per 100,000 and 420.0 per 100,000, respectively.

Priority # 3 – Improve the Health of Massachusetts Youth: Engage youth in educational programs that teach and support sound decision-making skills for health (to address issues such as obesity, physical inactivity, injuries, tobacco use, substance abuse, and sexual behavior).

The Centers for Disease Control (CDC) states, "During the transition from childhood to adulthood, adolescents establish patterns of behavior and make lifestyle choices that affect both their current and future health. Adolescents and young adults are adversely affected by serious health and safety issues such as motor vehicle crashes, violence, substance use, and sexual behavior. They also struggle to adopt behaviors that could decrease their risk of developing chronic diseases in adulthood— behaviors such as eating nutritiously, engaging in physical activity, and choosing not to use tobacco. Environmental factors such as family, peer group, school, and community characteristics also contribute to the challenges that adolescents face. To have the most positive impact on adolescent health, government agencies, community organizations, schools, and other community members must work together in a comprehensive approach. Providing safe and nurturing environments for our nation's youth can ensure that adolescents will be healthy and productive members of society." 1

Priority #4 – Improve Women's Health: Deliver educational programs to promote women's health and reduce their risks of disease, addressing such issues as obesity, physical activity, heart disease, breast cancer, reproductive health, and menopause.

Chronic conditions such as heart disease, cancer and stroke are the leading cause of death and account for 63% of American women's deaths.¹ Symptoms and

7. Assumptions made for the Program

This plan is based on the following assumptions:

USDA funding for EFNEP and FNP nutrition education programs will not diminish.

UMass Outreach and Extension is willing to make strategic investments based on recommendations documented in the health promotion and disease prevention critical issue paper.

UMass Outreach and Extension will support and provide initial funding for the development of broader health education programs.

UMass Outreach and Extension will invest in staff time for the development of broader health education program, including faculty collaborations.

Extension staff and UMass faculty will collaborate to seek new funding.

Extension staff and UMass faculty will develop joint research and outreach projects; this will provide opportunities for graduate students' thesis and field experience.

UMass Outreach and Extension will support collaborations with other Extension programs.

UMass Outreach and Extension are willing to invest in staff development.

8. Ultimate goal(s) of this Program

Improved Human Health and Well-being - Diverse youth, families, and communities will achieve greater physical and social well-being.

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	23.7	0.0	0.0	0.0
2008	23.0	0.0	0.0	0.0
2009	23.0	0.0	0.0	0.0
2010	23.0	0.0	0.0	0.0
2011	23.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

- Online education courses and programs
- Summer institutes; train-the-trainer courses and curriculum
- Seminars at the university and community sites
- Workshops
- Youth, adult and train-the-trainer curriculum development
- Printed materials
- Collaborations with UMass faculty and departments
- Collaborations with other Extension programs
- Collaborations with other agencies and organizations addressing health issues

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts))

15. Description of targeted audience

- Adults
- Youth
- Women
- Minority and underserved populations
- Health educators and providers
- Teachers
- UMass faculty, students and administration
- State and local agencies
- State legislators

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	7388	144874	143754	71179
2008	7388	144874	143754	71179
2009	7388	144874	143754	71179
2010	7388	144874	143754	71179
2011	7388	144874	143754	71179

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 520 2008: 520 2009: 520 2010: 520 2011: 520

Output Target

Workshop series or educational course

2007: 1100 2008: 1100 2009: 1100 2010: 1100 2011: 1100

Output Target

Facilitated Group Meetings or Conferences

2007: 7 2008: 7 2009: 7 2010: 7 2011: 7

Output Target

Demonstration Projects

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

Output Target

Other personalized interventions or services

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

Output Target

Printed material (Newsletters, Manuals, Fact sheets, Calendars)

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

Output Target

Displays

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

Output Target

Other Computer or web-based Based Delivery (CDs, DVDs, Pod casts)

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Percentage of participants that will increase knowledge of healthful diets and physical activity, to prevent overweight and obesity

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants that will improve diet and physical activity behaviors, to prevent overweight and obesity

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will increase knowledge to prevent obesity-related diseases, such as cardiovascular diseases, diabetes, hypertension, and diet-related cancers

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants that will improve behaviors to prevent obesity-related diseases, such as cardiovascular diseases, diabetes, hypertension, and diet-related cancers

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will increase knowledge related to youth health issues, such as obesity, inadequate physical activity, asthma, substance abuse, and sexual behaviors

Outcome Type: Short

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will influence youth to improve behaviors related to youth health issues, such as obesity, inadequate physical activity, asthma, substance abuse, and sexual behaviors

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will increase knowledge to address women's health issues, such as obesity, inadequate physical activity, cardiovascular disease, diabetes, breast cancer, reproductive health and life-cycle changes (pregnancy, menopause)

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participants that will improve behaviors addressing women’s health issues, such as obesity, inadequate physical activity, cardiovascular disease, diabetes, breast cancer, reproductive health and life-cycle changes (pregnancy, menopause)

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will increase knowledge of health literacy and health disparities

Outcome Type: Short

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Legislators and policy makers will make decisions that help promote the health of Massachusetts residents

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

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

Extension chooses not to invest in this issue.
 State and federal funding diminish.
 Grants are not funded.
 Staff levels are insufficient to provide these services.
 Faculty and staff over-extended with current work load.
 Collaborations and networking fail (i.e., we are not able to recruit partners).

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Other (Focus group)

Description

Tests
 Pre- and post-surveys
 Self-report
 Qualitative data collection (interviews or focus groups)

22. Data Collection Methods

- Whole population
- On-Site
- Structured

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Land Use Management

2. Program knowledge areas

- 610 20% Domestic Policy Analysis
- 605 20% Natural Resource and Environmental Economics
- 608 30% Community Resource Planning and Development
- 131 30% Alternative Uses of Land

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

Massachusetts is the third most densely populated state in the nation. The rate of land consumption for residential development is steadily increasing and far exceeds that of its population growth, yet it ranks among the lowest states in terms of housing affordability. Land use planning tools and practices applied towards future development are critically important given the conflicting pressures between maintaining viable ecosystems, protecting natural resources as a base for economic development and quality-of-life, and providing affordable and marketable housing.

While the state has seen little or no growth in single-family housing starts, residential development represents a growing proportion of land consumption. The average (interior) living area for new homes increased 44 percent between 1970 and 2002, while average lot sizes increased 47 percent in the same period. Average lot sizes more than doubled in five high-growth Massachusetts counties. The true impact of development, including road building and forest fragmentation, is close to 78 acres per day. Nearly nine of every ten acres lost went to residential development, with 65 percent used for low-density, large-lot construction.

This unplanned and excessively consumptive growth has negatively impacted water resources, coastal environments, natural resource-based enterprises, open space, wildlife habitat, and housing costs. The New England small town character has been compromised to the extent that many town centers have ceased to retain the visual and communal nature of their historical antecedents. Developing and implementing land use tools and practices that offer long-term sustainability on the local and regional level is therefore of paramount importance.

6. Situation and priorities

Currently in Massachusetts:

The state's zoning statutes rank near the bottom in terms of their ability to protect natural resources or to appropriately direct development. Despite a strong tradition and authority for home rule, a uniquely broad set of special exemptions within the planning and land use statutes often make it difficult for local communities to assert real planning control.

The state is fragmented into 351 towns and cities whose boundaries were set well before the 20th century. Almost half of the municipalities do not have professional planning staff; their volunteer boards struggle with increasing levels of responsibility, liability and public mistrust.

Housing affordability has been a casualty of these circumstances and is increasingly perceived as being in competition with land and water resource protection priorities.

The University of Massachusetts Amherst possesses a strong academic and research base for addressing many elements of land use planning. Expertise and research capacity exist in the Department of Landscape Architecture and Regional Planning in the areas of regional land use, watershed and open space planning. Programs such as the Center for Rural Massachusetts and the Citizen Planner Training Collaborative combine research and land use education in the field. In addition, UMass Extension can draw on the research expertise of other departments and campus centers such as the Department of Natural Resources Conservation, the Center for Public Policy and the Department of Resource Economics. UMass Extension has also built strong collaborative relationships off campus with the professional and municipal planning community, with state regulators and legislators, and foundations.

Based on information from our stakeholder input process and an assessment of the University's current research and extension capacity, UMass Extension will be addressing the following priorities in Land Use Management over the next five years:

- 1) Promote Land Use tools that foster sustainable development
Improving Massachusetts land use statutes, as well as local subdivision control bylaws, master plans, zoning bylaws and related

regulations, must be a significant approach in the Commonwealth's strategic attempts to rein in haphazard growth. The University and Extension have the expertise and capabilities to bring much needed education, outreach, technical assistance and other forms of direction and help to state government, municipalities, non-profits and educational groups to help address these sensitive issues.

2) Promote integration of natural resource protection into land use planning and economic development

While natural resource protection is an intrinsic aspect of sustainability, the land use planning community often sees itself as separate from the environmentalist movement. Open space, habitat and watershed protection and planning, greenways, and agricultural land protection need to be integrated within all planning approaches. This requires working on the state, regional and local level with regulatory and non-regulatory tools. It also assumes collaboration across different program areas within UMass Extension.

3) Promote public participation in land conservation and management

Land conservation is paramount in Massachusetts, as the problems associated with land loss are approaching a point where they may become irreversible. Land conservation can be achieved in many ways within compact development patterns or by removing land from development. UMass Extension programs have developed tools for targeted land conservation that effectively preserve biodiversity and maintain ecosystem integrity. This can be partnered with expertise in legal conservation and management tools available to landowners and municipalities. Educational efforts must focus on the public perception that land conservation deprives landowners and communities of value and income.

7. Assumptions made for the Program

Overriding Assumptions: it is assumed that Extension land use-related personnel will:

Engage in carefully crafted outreach and research that utilizes the knowledge of both stakeholders and secondary sources, to increase understanding of fundamental issues, and broadens the stakeholder list as necessary.

Periodically update the slate and status of key issues by establishing effective, ongoing communications mechanisms.

Formulate and periodically adjust goals and objectives that are attainable and closely correlated with the identified issues and needs.

Emphasize the education and training of stakeholders in all sectors.

Critical Massachusetts Planning Issue Assumptions:

The present statutes for zoning, planning and subdivision control foster unsustainable development patterns & practices.

There is a perception in some policy sectors that improved planning authority and more sustainable environmental practices are incompatible with the urgent needs of affordable housing, when, in reality, the two sets of issues share such basic dilemmas as the dominance of large lot/exclusionary zoning.

It is as important to consider & evaluate planning & development issues on a logical regional basis as it is certain that implementation actions will be executed on a local basis.

8. Ultimate goal(s) of this Program

Enhanced Health And Productivity Of Natural Resources And Ecosystems - The quality of land, water, plant, animal, and biodiversity resources will be protected and enhanced, and healthy self-sustaining ecosystems maintained.

Stronger Local Economies - Natural and human resources will be managed or cultivated in ways that support strong local economies

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	2.4	0.0	0.0	0.0
2008	3.0	0.0	0.0	0.0
2009	3.0	0.0	0.0	0.0
2010	3.0	0.0	0.0	0.0
2011	4.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Workshops, training seminars & conferences involving planning professionals and local officials
 Municipal assistance w/natural resources and open space plan implementation & protective strategies
 Property owner education programs and technical assistance on individual land protection or limited development plans
 Written and electronic media educational materials to targeted citizen, landowner and professional audiences, as well as use of web site and further publicity efforts
 Advanced tools research, compiling & analyzing the most effective and innovative land use tools (primarily regulatory) employed in MA communities
 Multi-town/regional demonstration projects to apply and evaluate the impact of innovative approaches to planning, plan implementation and management of growth in related sub-regions
 Targeted interventions in particular sub-regions of MA with accelerated, hands-on training for clusters of towns faced with either a growth rate that exceeds their fiscal, infrastructural or environmental capacity, or the impacts from very large scale development proposals
 Study planning methods and tools that evaluate resource protection with affordable housing needs and avoidance of exclusionary zoning patterns

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts))

15. Description of targeted audience

Local government officials
 State and Federal legislators
 State and Federal agencies/commissions
 Working landscape stakeholders
 Development and design communities
 Large landowners
 Non-profit conservation, land use planning and community development organizations and interested professional organizations
 Educators and outreach professionals and trainers
 Consultants and professional practitioners in land use, community planning, natural and cultural resource preservation, community development

Regional organizations
 Other stakeholders, private citizens, students, schools

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	833	500	0	0
2008	833	500	0	0
2009	833	500	0	0
2010	833	500	0	0
2011	833	500	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 15 2008: 15 2009: 15 2010: 15 2011: 15

Output Target

Workshop series or educational course

2007: 60 2008: 60 2009: 60 2010: 60 2011: 60

Output Target

Facilitated Group Meetings or Conferences

2007: 21 2008: 21 2009: 21 2010: 21 2011: 21

Output Target

Demonstration Projects

2007: 2 2008: 2 2009: 2 2010: 2 2011: 2

Output Target

Site visits

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

Output Target

Other personalized interventions or services

2007: 60 2008: 60 2009: 60 2010: 60 2011: 60

Output Target

Printed material (Newsletters, Manuals, Fact sheets, Calendars)

2007: 26 2008: 26 2009: 26 2010: 28 2011: 30

Output Target

Websites

2007: 7 2008: 7 2009: 7 2010: 7 2011: 7

Output Target

Other Computer or web-based Based Delivery (CDs, DVDs, Pod casts)

2007: 9 2008: 9 2009: 9 2010: 9 2011: 9

Output Target

Displays

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Number of Massachusetts zoning, planning and subdivision statutes that will allow for greater local and regional authority to apply sustainable planning tools

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of local land use officials and professional planning practitioners that will apply updated master plans, zoning and subdivision regulations that put greater emphasis on sustainability and include opportunities for affordable housing

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of municipal land use boards that will practice better adherence to legal and procedural standards and increase transparency in their processes

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of municipal permitting bodies will better address natural resource and biodiversity protection, wetland and wildlife habitat assessment during design and permitting processes

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of state and local officials will employ more environmentally sound standards of design, construction and mitigation in public facilities and transportation projects

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of land use managers and farmers that will base decisions on increased understanding of biodiversity values, utilizing CAPS and other technological tools where possible

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of state government, municipalities and private non-profit entities (e.g., land trusts and land stewardship organizations) that will increase the rate of land protection and the quality of land protected

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of large landowners will utilize a full array of operational and disposition-with-development options to enter into voluntary conservation and limited development agreements

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of land developers that will adopt more smart growth practices and more compact development patterns

Outcome Type: Medium

2007: 5 2008: 6 2009: 7 2010: 6 2011: 5

Outcome Target

Percentage of participants in the development and design communities that will employ design techniques that better integrate the needs of development projects with those of natural resource based businesses

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

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

{NO DATA ENTERED}

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Other ()

Description

A general plan for evaluating the degree of success in addressing this issue could include the following:

- Monitoring new laws and regulations
- Evaluating knowledge gains of municipal board members
- Assessing the contributions of regional planning agency and land trust websites
- Measuring knowledge gains made by large landowners
- Recording conservation restrictions
- Regional planning agency, land trust and conservation organization websites can be scrutinized for anecdotal data
- Stakeholder participation can be used to measure progress
- Reviewing of existing state records and websites

22. Data Collection Methods

- Whole population
- Mail
- Case Study
- Observation

Description

Improved laws and regulations: can be monitored via research assistants scrutinizing Ordinance.com, regional planning agency websites, Attorney General's annual list of approved zoning laws, and other sources.

More knowledgeable/trained boards: Among those who attend CPTC training, the CPTC conference, MA Federation of Planning & Appeal Boards conference, and citizen planners who attend the MA—American Planning Association (APA) and MA Association of Planning Directors (MAPD) conferences—the attendance can be monitored & towns noted, under the assumption that attendance at those venues will result in at least some degree of pertinent learning. The broader, more conceptual level of understanding is harder to evaluate and is probably best addressed with a sample survey from time-to-time.

Regional collaborations: can be monitored relatively easily via annual scrutiny of regional planning agency and land trust websites, from which Extension personnel can assess degrees of contribution and involvement from program activity.

Wetland/habitat assessment: a brief questionnaire at venues such as the MA Association of Conservation Commissions, Land Trust Coalition & others might yield a reasonable sample of boards and commissions better utilizing such analysis & then periodically compared at points in time, allowing creation of a periodically updated data base of this activity, and against which Extension personnel can assess degrees of contribution and involvement from program activity.

Large landowners: who receive such educational assistance from land trusts, conservation organizations, Extension or other entities, or who attend regional workshops on such protection or limited development strategies, can be assumed to have gained knowledge and to have benefited from the experience. Recorded conservation restrictions (CR's) can be monitored via the state. Regional planning agency, land trust and conservation organization websites can be scrutinized for anecdotal data, allowing creation of a periodically updated data base of this activity, and against which Extension personnel can assess degrees of contribution and involvement from program activity.

Developers, builders, designers: developer attendance at Extension-connected forums, monitoring of the MA Environmental Monitor, the MA—APA newsletter, MACC website and other sources, attendance at MAPD and APA meetings and events, maintenance of the Center for Rural MA conservation subdivision database, and other sources can create a periodically updated data base of this activity, and against which Extension personnel can assess degrees of contribution and involvement from program activity.

Practitioners, educators, consultants: attendance by professionals at conferences, workshops and special meetings in which Extension personnel play a significant role can be monitored and compared over time.

Public capital projects: monitoring of local and state public works, municipal government, green building and other publications and periodicals and websites can convey a qualitative idea of trends in this area and allow at least a general assessment as to the extent of Extension educational influence.

Forestry and farm operations/Conservation Stewardship: stakeholder participation in forest and farm viability programs and monitoring of this activity statewide in MA (via MA DeptAgric Resources, MA Woodlands Coop and other websites) can be a strong indicator of progress under such initiatives: Extension programs and personnel are involved with a significant portion of these activities. Recorded conservation restrictions (CR's) can be monitored via the state. Regional planning agency, land trust and conservation organization websites can be scrutinized for anecdotal data, allowing creation of a periodically updated data base of this activity, and against which Extension personnel can assess degrees of contribution and involvement from program activity.

Open Space Preservation: reviewing of state-recorded CR's, acquisitions by conservation organizations & land trusts, MA Audubon land tracking, MA Geographic Information System mapping updates. Regional open space and watershed mapping updates by regional planning agencies, and other sources can create a periodically updated data base of this activity, and

against which Extension personnel can assess degrees of contribution and involvement from program activity.

Land Use Reform: CRM has been much involved with the movement to reform the statutes in MA, which uniquely promote formless and land consumptive development (un-smart growth), by means of technical & informational support activities & can assess the progress of such efforts on a continuous basis.

Community Preservation Act: It will be a simple matter to annually monitor the MA Executive Office of Environmental Affairs & Community Preservation Coalition websites to determine which communities passed or attempted to pass the Act and where Extension program activity had contributed to the initiatives.

Alternative Economic Development: websites and special studies from the MA Office of Commonwealth Development, selected regional planning agencies, rural worker cooperatives, USDA reports, university studies & other sources will compilation and periodic updating of projects involving low impact and small scale economic development in communities, resource-based business and local entrepreneurship, and assessment of Extension program activity in such initiatives.

1. Name of the Planned Program

Natural Resource-Based Economic Development

2. Program knowledge areas

- 605 30% Natural Resource and Environmental Economics
- 608 20% Community Resource Planning and Development
- 131 20% Alternative Uses of Land
- 123 30% Management and Sustainability of Forest Resources

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

Massachusetts relies on its forests, soils, waters, and scenic landscapes to provide the much-needed employment, income, products, recreation and ecosystem services that meet its citizens' needs and drive its healthy local economies. Maintaining a healthy local economy is a major concern for many communities in Massachusetts and the value of their natural resources serves as a major incentive for their conservation. Natural resource-based businesses (agriculture, equine industries, forest based businesses, fishing, shellfish, outdoor recreation and tourism, horticultural green industries, and turf) can have a substantial, positive impact on the health of local economies and are important tools for maintaining open space. UMass Extension will support Natural Resource Based Businesses through research, education and informed policy for the benefit of the entire commonwealth.

6. Situation and priorities

Massachusetts is a diverse and rapidly developing state, rich in natural resources. According to the MA Department of Agricultural Services, Massachusetts has 6,100 farms with a total of 518,570 acres. Massachusetts Forests provide ecosystem services including climate regulation, freshwater supply, stormwater mitigation, nutrient regulation, biodiversity, soil retention and aesthetics valued at \$2.9 billion according to Mass Audubon (2003). Other natural resource based businesses contribute to the economic vitality and the quality and esthetic character of life in Massachusetts. According to UMass Extension, nearly 4,000 golf courses and athletic fields in Massachusetts encompass nearly 60,000 acres of land while Ornamental Horticultural has 4,250 businesses encompassing about 79,000 acres.

Everyday, Massachusetts loses over 40 acres of open space (MA Audubon, 2003). Farmland in Massachusetts, for example, has decreased 10% from 1997 through 2002. In addition, Massachusetts is home to some of the most archaic land use laws in the country which can encourage suburban sprawl that has a negative impact on natural resource based businesses. There are 46,554 non-industrial, private landowners in MA with land of 10 acres or more who own 2.2 million acres, accounting for 86% of the state's forests. The average age of these forest land owners is approximately 60 years. A significant portion of this land will be transferring ownership or generations over the coming years. Finally, a range of competing interests threaten to limit access to our rich aquaculture resources.

Natural Resource Based Economic Development provides an opportunity to preserve community character, while providing economic development and other critical public benefits to current and future generations. The University of Massachusetts serves a primary role in delivering education to target audiences, informing policy decisions, and generating applied research critical to the health of natural resource based businesses in Massachusetts and their associated public benefits.

UMass Extension has identified the following priorities for addressing Natural Resource-based Economic Development (NRBED) in Massachusetts:

1) Land and water (marine and inland) resources are protected to ensure the future of NRBED and the many public benefits they provide.

The loss of open space is a high priority threat to NRBED and the public benefits that these lands provide. It is critical that prime land and water resources in Massachusetts are preserved to sustain diverse types of economically viable Natural Resource Based Businesses now and in the future. Without an appropriate amount and type of land and water resources, the future of these businesses is highly uncertain. Natural Resource-based Businesses are also diverse producers of public benefit, i.e. products, open space, clean water and scenic backdrops. NRBED can help preserve open spaces by providing income to those landowners who are responsible for the carrying costs of the property.

2) Natural Resource-Based Businesses are economically viable. They will need to develop and maintain operations resilient to changing economic, ecologic and social conditions of Massachusetts.

3) Natural Resource-Based Businesses are ecologically sustainable. Massachusetts is the third most densely populated state in the nation. The citizens of the Commonwealth depend on the full range of public benefits that our natural resources provide, including clean water and clean air. Reducing environmental impacts will also help ensure that future generations will have healthy, productive land and water to work.

4) Increased economic growth of Natural Resource-Based Businesses in areas where they are best suited based on environmental, economic, social and political factors. NRBED is most critical in areas of the state in which economic development is needed and natural resources lend themselves to sustaining, establishing or expanding these businesses. Even though Natural Resource Based Businesses may occur to different degrees in all regions of the state, the benefits of these businesses are felt throughout the Commonwealth by providing products of necessity, ecosystem services, safe and healthy food, and scenic landscapes.

5) Helping Natural Resource Based-Businesses in Massachusetts to meet a greater amount of the Commonwealth's product needs. According to the MA Department of Agriculture, the Commonwealth currently produces 32% of its own food needs (1% in poultry, 1.3% in meat, 11.2% in eggs, 14.6% in dairy, 33.1% in vegetables, 64.9% in fruits, 196.3% in seafood and aquaculture). Despite being the 8th most forested state in the country (proportionally), Massachusetts only meets 2% of its wood needs (Harvard Forest 2002). Increasing in-state production will help maximize benefit to local economies by encouraging value-added production and vertical integration of businesses. In state production can also bring fresher, healthier products to consumers.

7. Assumptions made for the Program

Staffing Levels will remain relatively stable

UMass Extension will work with partner organizations to achieve this plan.

The rate of development in Massachusetts will remain the same or continue to increase

There will continue to be faculty capacity to partner with in developing applied research projects

Economically viable natural resource-based businesses help maintain open space and public benefit in the face of increasing real estate values

8. Ultimate goal(s) of this Program

Stronger Local Economies - Natural and human resources will be managed or cultivated in ways that support strong local economies

Enhanced Health And Productivity Of Natural Resources And Ecosystems - The quality of land, water, plant, animal, and biodiversity resources will be protected and enhanced, and healthy self-sustaining ecosystems maintained.

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	14.3	0.0	0.0	0.0
2008	14.0	0.0	0.0	0.0
2009	14.0	0.0	0.0	0.0
2010	14.0	0.0	0.0	0.0
2011	14.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

- Workshops, Seminars, and Field Days
- Conferences
- Print Material (pamphlets, fact sheets, professional guides, books, etc...)
- Web Based Outreach
- Technical Assistance (e-mail, telephone, site visit)
- Applied Research
- Technical Reports
- Policy Briefs
- Diagnostic Activities (insect, plant disease, weeds, soil, and water)
- Assess Program Outcomes
- Grant Writing

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts))

15. Description of targeted audience

- Farmers
- Landowners
- Resource Managers
- Horticultural Green Industry businesses and personnel
- Professional Organizations and Industry Groups
- Natural Resource Agencies
- Municipalities
- Land Trusts and Conservation Groups

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	16410	104256	50	0
2008	16410	104256	50	0
2009	16410	104256	50	0
2010	16410	104256	50	0
2011	16410	104256	50	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 40 2008: 40 2009: 40 2010: 40 2011: 40

Output Target

Workshop series or educational course

2007: 150 2008: 150 2009: 150 2010: 155 2011: 155

Output Target

Facilitated Group Meetings or Conferences

2007: 140 2008: 140 2009: 140 2010: 140 2011: 145

Output Target

Demonstration Projects

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

Output Target

Diagnostic Services

2007: 700 2008: 700 2009: 700 2010: 700 2011: 700

Output Target

Site visits

2007: 55 2008: 55 2009: 55 2010: 50 2011: 50

Output Target

Other personalized interventions or services

2007: 665 2008: 665 2009: 665 2010: 665 2011: 665

Output Target

Printed material (Newsletters, Manuals, Fact sheets, Calendars)

2007: 140 2008: 140 2009: 140 2010: 140 2011: 140

Output Target

Displays

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Output Target

Websites

2007: 16 2008: 16 2009: 16 2010: 18 2011: 20

Output Target

Other Computer or web-based Based Delivery (CDs, DVDs, Pod casts)

2007: 60 2008: 60 2009: 65 2010: 65 2011: 70

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Percentage of participants that will adopt practices that protect land and water (marine and inland) resources

Outcome Type: Medium

2007: 30 2008: 30 2009: 35 2010: 35 2011: 40

Outcome Target

Percentage of participants that will adopt practices that ensure economically viability

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participants that will adopt practices that ensure ecological sustainability

Outcome Type: Medium

2007: 30 2008: 30 2009: 35 2010: 35 2011: 40

Outcome Target

Sales of products and services that are grown or produced in Massachusetts will increase

Outcome Type: Long

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

20. External factors which may affect outcomes

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

Description

The rate of real estate values are increasing significantly. This makes development a very appealing option for those who own land and that may be involved in a natural resource-business or support one through their resources. Assessments based on development potential instead of current use add to the tremendous pressure to develop. The countries most archaic land use laws only aid in the change of land use.

The cost of doing business in Massachusetts is an ever increasing factor in the success of Natural Resource Based Businesses. An understanding of labor and other costs associated with doing business in MA is important to the implementation of an effective NRBED program. Sound business practices, public policy and other external factors need to be addressed to assure success in the implementation of the NRBED Issue based programs

Massachusetts has distinct regional differences in population, wealth, and political influence, giving those areas with high populations and wealth greater political influence. These areas may not overlap with regions in which NRBED is targeted. This means political support for these activities could be difficult.

The price of energy (oil, natural gas, electricity, etc...) will play a significant role in NRBED. Higher energy prices will mean higher production costs, but may also encourage more use of local resources to avoid high shipping costs.

A general lack of understanding on the part of the commonwealth's citizens about what is involved in natural resource based economic development and its benefits to the Commonwealth can make it difficult to gain political support and can cause local conflict as there is an increasing rural-sub-urban interface.

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

Description

Evaluation of NRBED programs can happen at several scales, including: business, community, and statewide levels. At the university level, it is possible to evaluate the number of applied research projects and the level of student involvement.

Evaluation will be done using several methods, including: program evaluations, follow-up surveys of program participants, research to establish benchmarks and evaluate changes in knowledge, skills, actions taken or environmental conditions due to programming efforts, and participatory research.

22. Data Collection Methods

- Whole population
- Mail
- On-Site

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Organizational Development (Administrative Plan)

2. Program knowledge areas

- 903 50% Communication, Education, and Information Delivery
- 901 50% Program and Project Design, and Statistics

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

In addition to our work that is directed towards our (eight) critical issue, there are a host of things that we invest time and effort in that are designed to build the skill and capacity of staff to improve the overall effectiveness of the organization. The goals and outcomes for these activities cannot be adequately captured or measured using the impacts that are identified within our (eight) Critical Issue Plans (5-year Planned Programs).

The organizational development plan will help ensure that Extension staff members are fully involved, informed, and aware of their rights, duties and responsibilities and have the support and learning opportunities to meet work assignments. During the five year plan period, Extension will engage in organizational development to better articulate the expectations, structures, and processes regarding three areas: program development and planning, civil rights compliance, and staff development.

6. Situation and priorities

The main priorities that are addressed in our Organizational Development plan are:

Staff Development - building personal/team skills for increased organizational effectiveness (e.g., educational technology, new staff orientation, grant writing, evaluation capacity, volunteer management, faculty and campus partnerships)

Civil rights training and compliance

Strategic Planning and Program Development - includes fund raising activities, strategic planning and new program/team development and committee participation

7. Assumptions made for the Program

Extension retains current levels of administrative staff to support programs and services.

Extension retains level funding from the federal government, the legislature, the University and Outreach.

Extension obtains required levels of administrative support from centralized Outreach administrative units.

Staff is open to providing UMass Extension educational opportunities to all of the people of the state

Staff is equipped to provide UMass Extension educational opportunities to all the people of the state.

Extension administration makes achievement of Organizational Development goals a priority for all Extension programs and staff.

8. Ultimate goal(s) of this Program

UMass Extension will be more successful in reaching/serving traditionally underserved target audiences protected under federal statute.

Employment with UMass Extension includes a broad range of professional development opportunities that enhance personal growth, job satisfaction and assist staff in delivering quality Extension educational programs and services to diverse audiences. Effective UMass Extension projects with measurable impacts are sustained with public support, notification and engagement.

Opportunities for emerging projects and initiatives are developed and expanded. Ineffective or outmoded projects and initiatives are discontinued.

9. Scope of Program

- In-State 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	17.2	0.0	0.0	0.0
2008	17.0	0.0	0.0	0.0
2009	17.0	0.0	0.0	0.0
2010	17.0	0.0	0.0	0.0
2011	17.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Staff Development structures and processes to be developed include:

- Extension-wide Staff Development Plan, to identify the staffing levels, expectations, skill sets, conferences, on going courses of study, group training and development initiatives need to enhance staff and program unit capacity to meet issue plan goals and emerging needs of UMass Extension internal and external constituencies. This includes analysis of existing and new staff positions, diversity goals attainment in recruitment, hiring, promotion of staff, and regular needs assessment for each program unit. Measures will be established to evaluate the degree of progress toward issue plan impact indicator achievement.
- Individual Development Plans, to identify individual work, skill sets and knowledge needs with each staff members job. IDP's help ensure that each program's staff has the necessary training to meet issue plan goals and delivery quality programs, information or research to its constituents. Such plans will integrate with the University's Performance Management goal setting and review system and will tie in with Extension promotion, merit and succession planning. The Individual Plan will reflect the overall strategy of the program area to meet its goals and mission and will include identification of conference opportunities and course work or credentializing opportunities.
- Extension Staff Training and Development Series will make available, through needs assessment and prioritization, a series of offerings available to all Extension staff, such as customized Equal Opportunity and Diversity sessions, technology, or work process re-design training. The series will more formally utilize the University's Workplace Learning and Development offerings, and will be customized to meet each program's needs in a particular discipline or interest area.

Civil Rights structures and processes to be developed include, but are not limited to:

- Civil Rights Plan formation, including administrative goals and action plans for programs, internal reviews, complaint procedures and assignment of EEO staffing responsibilities within Extension as reviewed in an evaluation plan.
- Revised Public Notification Plans, including new statements on all program communications, brochures, media releases, printed information, contracts and web publications, updating of mailing lists data collection on minority collaborators, publication of policies in diverse public venues, etc.
- Data Collection by all Extension programs documenting outreach efforts to external constituencies to help ensure access by underserved, diverse communities and individuals in the state. This involves research into appropriate data collection methods (e.g., sampling, county audits;) review of marketing and programming materials, whole population analysis, observations (e.g., agendas, etc.); policy and procedure development on work with collaborators; and creation of a web data collection tool for use by Extension personnel state-wide.
- Civil Rights Training Series for staff, advisories, youth and collaborating organizations. This would include on-line formats

such as Civil Rights self-assessment tools.

e. Access to all Equal Opportunity Policies, Directives and Offices for staff and all constituencies via web based information sites and printed materials.

f. Review of Current Program Partnerships with external groups to ensure EEO compliance, including advisory nominations, compositions, by-laws provisions.

g. Recruitment, Hiring, and Succession Planning to ensure EEO considerations are met and integrated with Extension strategic and program issue plans.

h. Human Resource Policy and Procedures Review to ensure promotion, separations/retention, recruitment and hiring strategies are aligned with University policies and federal requirements.

Planning structures and processes to be developed include:

a. Extension-wide Strategic Plan, to align with the Outreach Strategic Plan, federal requirements and the CSREES Plan of Work for 2007-2011. This involves fiscal planning, examination, discussion and decision making on new cross-functional and adaptive program structures for Extension's current four programs. It may require re-definitions of priorities for Extension, new staffing assignments, organizational units and relationships with internal and external partners, faculty and audiences.

b. Extension Program Strategic Plans, to better define focus areas, revenue generation and resource development strategies, and staffing requirements. These plans will contribute to accountability for and alignment of programs with overall Extension, Outreach and University strategic plans.

c. Collaborative Outreach Administrative Department Plans, to better clarify the expectations, procedures, deliverables, costs and coordination efforts with Outreach units so that Extension top priorities are met, thus ensuring high quality program delivery to Extension constituencies. The three Outreach units include the Business Services Center, Marketing and Communication (including the Book Store and Information Technology,) and Outreach Development.

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention 	<ul style="list-style-type: none"> ● Newsletters ● Web sites

15. Description of targeted audience

UMass Extension Faculty and 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	200	400	0	0
2008	200	400	0	0
2009	250	400	0	0
2010	250	400	0	0
2011	250	400	0	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Trainings and workshops

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

Output Target

Web and Print Resources

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

Output Target

Committees

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

Output Target

Collaborations

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

Output Target

Consultations

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Extension programs are open, accessible and inclusive

Outcome Type: Medium

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

Outcome Target

Staff have the knowledge, skills and access to the resources necessary to ensure that programs are open, accessible and inclusive

Outcome Type: Short

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

Outcome Target

Extension staff will employ a range of practices that increase their job satisfaction, personal growth and professional effectiveness in delivering quality Extension educational programs and services. Practices will reflect specific organizational professional development goals (e.g. instructional technology, customer service, volunteer management, evaluation capacity)

Outcome Type: Medium

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

Outcome Target

Extension staff will develop a variety of skills and abilities that are designed to meet individual and

organizational professional development goals

Outcome Type: Short

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

Outcome Target

Staff adopt practices that sustain current projects and initiatives in a healthy and productive manner, develop opportunities for emerging projects and initiatives and discontinue ineffective or outmoded projects and initiatives.

Outcome Type: Medium

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

Outcome Target

Staff have the knowledge, skills, time and support that will allow them to sustain current projects and initiatives in a healthy and productive manner, develop opportunities for emerging projects and initiatives and discontinue ineffective or outmoded projects and initiatives.

Outcome Type: Short

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

20. External factors which may affect outcomes

- Economy
- Appropriations changes
- Public Policy changes

Description

Organizational restructuring within the University
 Decreases or increases in state and federal funding
 Competition for grant funding
 Natural disasters
 Societal and demographic change
 Evolving information technologies
 Changing legal, risk, political and economic environments
 Degree of support from Outreach administrative services for key Extension needs in marketing, communications, information technology, fundraising and development
 Changes in partnership agreements with non-profits, foundations, volunteer groups, county Extension programs
 Lack of adequate staffing or ability to hire and retain diverse staff
 Emergence of issues requiring new Extension programs and priorities
 Clarity of Civil rights reporting requirements so that they may be understood and implemented

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Time series (multiple points before and after program)
- Case Study

Description

{NO DATA ENTERED}

22. Data Collection Methods

- Whole population
- On-Site
- Observation
- Portfolio Reviews

Description
{NO DATA ENTERED}

1. Name of the Planned Program

Water Resource Protection

2. Program knowledge areas

- 135 20% Aquatic and Terrestrial Wildlife
- 112 40% Watershed Protection and Management
- 111 20% Conservation and Efficient Use of Water
- 133 20% Pollution Prevention and Mitigation

3. Program existence : Mature (More than five years)

4. Program duration : Long-Term (More than five years)

5. Brief summary about Planned Program

Adequate supplies of clean water are critical to public health and quality of life, food and fiber production, maintenance of healthy terrestrial, wetland and aquatic ecosystems, and economic sustainability of Massachusetts communities. Water resources are affected by a wide range of activities including development, storm water management, agricultural and natural resources based business activities, water withdrawals, and industrial activities.

The impacts of various land uses have degraded water quality in lakes, ponds, rivers, streams, estuaries, bays, salt ponds and groundwater, and threaten local and regional economies, including those based on recreational and commercial fisheries. For most water bodies, water quality data are generally lacking or are insufficient for assessing threats to human health and aquatic ecosystems.

Increased water consumption, unequal distribution of water supplies, wastewater treatment methods that do not return treated water to source watersheds, and cyclical drought have impacted the quantity of available surface and ground water supplies, forcing some communities to institute water-use regulations. Water withdrawals and other hydrological modifications are threatening the ecological integrity of wetland and aquatic ecosystems. There is a need for greater understanding of the potential threats to the water supply, and the geological and hydrological factors that impact water resources. There is also a need for land use policies that recognize both the vulnerability of those supplies and our reliance on them. Finally, there is a need for the development and implementation of Best Management Practices that will protect water resources.

6. Situation and priorities

Water is a primordial resource that must be protected to provide clean drinking water, support viable terrestrial, wetland and aquatic ecosystems, serve as an essential resource for businesses, and provide recreational opportunities. Historically in our region, water supply has been adequate, and point source pollution is now mostly under control. Increases in human population and changes in lifestyles, however, are creating new problems around water quantity and quality. Water withdrawals result in dry river beds and water consumption advisories, and polluted storm water has become a major concern for surface water bodies and wetlands. New pollutants are also discovered that need to be mitigated.

It is ultimately the state's responsibility to ensure safe and adequate water supply. In turn, the state relies on University-based research to investigate new threats, new treatment technologies, restoration principles, best management practices and effective policy steps to guide decision-makers. UMass Extension can bridge the gap between academic research and practices to apply that research. Municipal and regional government needs direction and practical examples to solve local water resource problems. Natural resources-based businesses need guidance to conduct business in an economically viable, environmentally conscious way. Other entities (agencies, non-profit organizations) need information to help educate the public on what steps they can take to protect the water resources they use.

Our experience at UMass shows that there is much research capacity in our various colleges and that Extension can partner with existing faculty to devise solutions to water resource problems. One effective approach is for faculty and Extension staff to develop programs that are targeted to, shared, or developed in collaboration with other groups, such as municipal departments or state/federal agencies, that deal directly with the public.

UMass Extension has identified the following priorities for addressing Water Resource Protection in Massachusetts:

1) Minimizing Land Use Impacts on Water Resources

Of great concern is how land use affects the quantity and quality of water resources. New development can be planned and conducted to minimize storm runoff, water withdrawals, and serious damage to fish and wildlife habitat

2) Water Resource Protection in Land Management

Public and private land managers and businesses dependent on natural resources (such as agriculture, the horticultural green industry, forestry and others) have a direct impact on water resources. They must use practices that prevent and reduce water pollution, and protect and restore water resources.

3) Water Resource Protection through Land Conservation To protect water resources in the long term, land acquisition and other conservation programs must include water resource protection as an important element.

4) Adequate Supplies of High-quality Drinking Water

Water suppliers must ensure adequate supplies of high quality drinking water (through land acquisition, proper land management, distribution oversight, etc.)

5) Minimizing Impacts of Large Water Users on Aquatic Ecosystems

Water suppliers, dam operators, and industrial water users adopt practices that protect aquatic and wetland ecosystems. This includes groundwater and surface water withdrawals, river water level regulation, changes in water temperature due to water impoundment and discharges of cooling water, and the disruption of fish and other aquatic organism passage.

7. Assumptions made for the Program

To deliver outreach activities for this issue, we will rely on strong relationships that currently exist with many targeted audiences such as agricultural, landscape and other natural resource based businesses, state and municipal entities and others. Extension has a valued reputation with these groups. Relationships also exist between Extension field staff and faculty which will be valuable when working on this issue. Other relationships can also be formed with additional collaborators to address this issue.

Through the faculty and staff in the natural resource program and agriculture and landscape program we have expertise to provide accurate information on the nature of this issue. In addition we have well established networks of Extension and other university resources in agriculture and the green industry in New England and across the country. Currently many Extension staff work to some degree in the area of water protection with their existing clientele groups, regulatory agencies, municipal entities and citizens. These staff members are willing to continue to develop necessary skills and abilities to work with this issue. Continued and enhanced support of the programs, faculty and staff currently addressing these issues is critical.

UMass Extension will continue to work with the Water Resources Research Center (WRRC) to facilitate collaboration and multidisciplinary approaches to research and outreach education that addresses water resource protection.

Faculty not already working with Extension are willing to engage in applied research that addresses water resource issues in Massachusetts and work collaboratively with Extension to create integrated research and extension programs.

Additional staff capacity with particular expertise in water resource protection and the will be needed to carry out many of the listed activities for this issue. Programming to effectively address the issue of water resource protection will also depend on better communication and coordination of efforts within and between Extension programs, as well as stronger relationships with faculty and integration with research.

This issue has potential for grant funded activities. There is an opportunity for funding to be obtained through Extension research and teaching grants that engage faculty and for Extension to facilitate grant funding. Collaborative efforts will result in better opportunities for grants to be funded. Strong interest among our stakeholders and partners in workforce training and preparation is likely to create opportunities for revenue based programming related to this issue.

As the state continues to move toward the direction of increasing regulations to protect water resources, people will be motivated to change practices that concern this issue. For example, if water use is restricted, all water users will be affected which creates "teachable" windows of opportunity. If there is a drought, again all water users will be affected and be motivated to learn and change practices. Extension programs provide unbiased, research based information that will serve as catalyst for change in practices affecting water use.

8. Ultimate goal(s) of this Program

Enhanced Health And Productivity Of Natural Resources And Ecosystems - The quality of land, water, plant, animal, and biodiversity resources will be protected and enhanced, and healthy self-sustaining ecosystems maintained.

Improved Human Health And Well-Being - Diverse youth, families, and communities will achieve greater physical and social well-being.

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	7.0	0.0	0.0	0.0
2008	8.0	0.0	0.0	0.0
2009	8.0	0.0	0.0	0.0
2010	8.0	0.0	0.0	0.0
2011	8.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Activities with Direct Contacts

- Farm/site/office visits
- Field days
- Meetings
- Educational/training workshops and seminars
- Non-degree courses
- Demonstration projects
- Collaborative projects
- Technical services
- E-mail
- Telephone calls

Activities with Indirect Contacts

- Newsletters
- Web sites
- Educational technology (CDs, DVDs, podcasting)
- Fact sheets
- Technical reports

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts))

15. Description of targeted audience

Farmers
 Horticultural Green Industry businesses and personnel (landscape, lawn care, golf, athletic field, public and private school and facilities, municipalities and other publicly owned properties)
 Land owners and Land Managers
 Natural Resource Farmers
 Natural Resource Agencies
 Municipalities
 Environmental Protection Groups and Organizations
 Professional Organizations and Industry Groups
 Business/Industry

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	1639	890	750	0
2008	1639	890	750	0
2009	1639	890	750	0
2010	1639	890	750	0
2011	1639	890	750	0

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 29 2008: 29 2009: 29 2010: 29 2011: 29

Output Target

Workshop series or educational course

2007: 140 2008: 140 2009: 140 2010: 140 2011: 140

Output Target

Facilitated Group Meetings or Conferences

2007: 150 2008: 150 2009: 150 2010: 150 2011: 150

Output Target

Demonstration Projects

2007: 2 2008: 2 2009: 2 2010: 2 2011: 2

Output Target

Diagnostic Services

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

Output Target

Site visits

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

Output Target

Other personalized interventions or services

2007: 585 2008: 585 2009: 585 2010: 585 2011: 585

Output Target

Printed material (Newsletters, Manuals, Fact sheets, Calendars)

2007: 134 2008: 134 2009: 134 2010: 134 2011: 134

Output Target

Displays

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Output Target

Websites

2007: 17 2008: 17 2009: 17 2010: 17 2011: 17

Output Target

Other Computer or web-based Based Delivery (CDs, DVDs, Pod casts)

2007: 65 2008: 65 2009: 65 2010: 65 2011: 65

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Land use planning adopts appropriate zoning, bylaws, and regulations that allow economic development without compromising environmental quality

Outcome Type: Medium

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

Outcome Target

Number of development projects (through their review and permitting) that will minimize impacts on water resources and ecosystems

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of agencies, organizations and communities that will implement strategic land conservation programs that protect water resources and ecosystems

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of public and private land managers and natural resources based businesses that will use practices that prevent and reduce threats to water quality and quantity, and protect and restore water resources

Outcome Type: Medium

2007: 5 2008: 5 2009: 5 2010: 5 2011: 5

Outcome Target

Number of water suppliers that will adopt practices to ensure adequate supplies of high quality drinking water

Outcome Type: Medium

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

Outcome Target

Number of water suppliers, dam operators, and industrial water users that will adopt practices that protect aquatic and wetland ecosystems

Outcome Type: Medium

2007: 4 2008: 4 2009: 4 2010: 4 2011: 4

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

{NO DATA ENTERED}

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

Description

Extension faculty and staff will evaluate the impacts of programs through a variety of methods, including:

Program evaluations
Follow up surveys of program participants

Research to establish benchmarks and evaluate changes in knowledge, skills, actions taken or environmental conditions due to programming efforts
Participatory research

To the extent possible we will evaluate the changes in conditions or actions taken in response to Extension programs. Where this is not possible we will evaluate the educational outcomes of our programs and use reasonable assumptions and other research findings to estimate the impacts of our programs.

22. Data Collection Methods

- Whole population
- Mail
- On-Site

Description

{NO DATA ENTERED}

1. Name of the Planned Program

Youth Development and Engagement

2. Program knowledge areas

- 724 20% Healthy Lifestyle
- 806 60% Youth Development
- 805 20% Community Institutions, Health, and Social Services

3. Program existence : Mature (More than five years)**4. Program duration :** Long-Term (More than five years)**5. Brief summary about Planned Program**

Americans are concerned about preparing youth for the challenges of the 21st century. While this concern has recently focused on standardized tests, academic achievement is only one component of preparation for citizenship and workforce participation. Young people also need to develop knowledge, skills, and attitudes for good health, environmental stewardship, creative expression, and community service. Young people are best able to achieve these outcomes in environments that offer safety, caring adults, and opportunities for authentic experience. Both in-school and out-of-school time programs must do more to provide optimum conditions for youth development. Educators and youth workers need ongoing professional development and curriculum resources for experiential learning and youth development best practices. Interested community adults need well-designed opportunities to share their expertise and passions with youth. Older youth are also a largely untapped resource for their communities and deserve opportunities to contribute in ways that will enable them to grow up to become better citizens, workers, neighbors, and parents.

6. Situation and priorities

Positive youth development experiences are connected to decreases in negative behaviors such as alcohol use, tobacco use and violence, and increases in positive attitudes and behaviors. According to a report commissioned by the Nellie Mae Education Foundation (2004), youth who participated in programming during the afterschool hours exhibited a greater interest in learning and achieved higher academic performance. The report also stated that programming did not have to be school-based. It could be of any format, such as 4-H clubs, community groups, Boys & Girls Clubs, etc., as long as programs were well-run, of high quality and actively involved youth participants. Youth development programs can approach enhancing youth experiences in a variety of ways including mentoring, academic achievement-oriented programs and civic engagement.

For any approach to be effective, it must be grounded in positive youth development principles. These principles suggest that all youth must have a combination of the following: access to resources that promote optimal physical and mental health; nurturing relationships with adults and positive relationships with peers; safe places for living, learning and working; educational and economic opportunity; and structured activities and the opportunity for community service and civic participation (MA Department of Public Health, 2003). According to a National report entitled Eight Essential Elements for 4-H, (1999) effective youth programs must also ensure inclusive environments for all youth, as well as opportunities for mastery and active participation in determining one's future.

UMass Extension includes both university-based and community-based program elements as a means to strengthen the University's outreach to youth with the following program emphases:

Animal science - Animal science activities account for approximately 75% of the entire 4-H program in Massachusetts, engaging over 2,250 youth annually. 4-H youth who participate in animal projects are often asked to represent the state at national conferences, and many win awards. Building upon the strength of our existing programs, the Massachusetts 4-H Animal Science Program is also expanding into urban areas in an effort to increase the involvement of urban youth in the study of animal science. Environmental science and stewardship - The concept of scientific stewardship of natural resources is at the heart of the land grant mission, and youth programs have always played a part in this outreach. Currently, our major environmental science and stewardship efforts are the Boston Urban Stewards program, the Massachusetts Envirothon/CNRE collaboration, and the Beachcomber trailer. Results from our recent stakeholder survey underscore the public's expectation of a UMass and Extension presence in environmental education. These environmental education programs for youth draw on a strong teaching base at UMass Amherst, particularly in the College of Natural Resources and Environment and the School of Education. Demonstrated faculty/staff interest includes urban forestry and water resources, and community-based and project-based science education. Staff engaged in environmental youth development efforts have also cultivated strong collaborations outside the University and with environmental agencies and NGOs. Current environmental

stewardship programs are leaders in the area of youth development outcomes measurement for UMass Extension. These programs are also experienced and well positioned in terms of outreach to diverse, urban audiences. Research for Extension's 07-11 plan also uncovered potential to link with nutrition, agriculture, and youth development goals through gardening programs. Healthy lifestyles - The rates of childhood overweight and obesity have tripled in the past two decades. Childhood overweight is associated with social and psychological problems as well as physical problems. Overweight children are more likely to become overweight and obese adults. Overweight among adults, as well as poor diet and physical inactivity, is strongly associated with risks of heart disease, cancer, stroke, and diabetes. Lifestyle habits often begin in childhood, so teaching healthy eating and physical activity habits to youth can influence their behaviors over their lifetimes. Cancer, diabetes, heart disease and stroke, all of which are associated with poor diet and physical inactivity, collectively account for nearly two out of every three deaths in the United States. A recent study reported that diet and physical activity levels are contributing nearly as many deaths as smoking. Changes in behavior necessary to mitigate this devastating toll require a greater understanding of the roots of that behavior, as well as education in skills necessary to choose, prepare, and consume healthful foods in healthful amounts.

Lifeskills – From communication skills, to recordkeeping, from teamwork to valuing diversity, Massachusetts youth need a wide variety of life skills to grow into competent, caring, capable citizens prepared to work and live in the 21st century. UMass Extension has been working in the area of youth development for over 100 years. Staff have demonstrated that they have the knowledge and skills to work effectively with adults who work or volunteer with youth. They understand youth development best practices. They are members of various collaborations, many in urban communities. They are beginning to build a presence on the UMass campus. With the current level of staffing, however, and the realization that additional staffing may not be forthcoming, training other adults who work or volunteer in the field is a key strategy.

UMass Extension has identified the following priorities for addressing Youth Development and Engagement in Massachusetts over the next five years:

- 1) Youth are engaged in learning
- 2) Adults who work or volunteer with youth integrate positive youth development principles into their efforts
- 3) Youth serving organizations have informed staff and volunteers and the support needed to provide a safe, nurturing place for young people when they are away from their parents

7. Assumptions made for the Program

University Outreach and Extension are willing to make strategic investments based on critical issues

Staffing levels are stable

There is support for staff development

University Outreach and Extension recognize an organization-wide commitment to youth development

Resources are available for faculty involvement in youth programs for the purpose of providing subject matter, outreach and teaching

Staff will incorporate strategies and tactics of the 4-H strategic plan into their plan of work.

University Outreach and Extension support collaborations with other Extension programs on youth development

Extension continues its partnerships with Massachusetts 4-H Foundations, Essex County 4-H Foundation and 4-H camps.

Volunteers and collaborators provide continued support and participation within the 4-H volunteer network.

Staff measure program impacts.

8. Ultimate goal(s) of this Program

Improved Human Health and Well-Being - Diverse youth, families, and communities will achieve greater physical and social well-being.

9. Scope of Program

- In-State Extension
- 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. Estimated Number of professional FTE/SYs to be budgeted for this Program

Year	Extension		Research	
	1862	1890	1862	1890
2007	15.9	0.0	0.0	0.0
2008	16.0	0.0	0.0	0.0
2009	16.0	0.0	0.0	0.0
2010	16.0	0.0	0.0	0.0
2011	16.0	0.0	0.0	0.0

Outputs for the Program

13. Activity (What will be done?)

Oversee and manage volunteer systems (eg. clubs, advisory boards, events, community service events, fairs, collaborations in compliance with state laws and university policies)

Recruit, train and support volunteers

Conduct workshops and trainings (eg. web-based, face to face, on campus)

Develop products (eg. curriculum, newsletters, print and web-based material, and events)

Assess program outcomes

Participate in applied research with faculty where possible.

Develop new internal collaborations among Extension programs, in university departments to create and share healthy lifestyle knowledge with youth.

Develop new internal collaborations among Extension programs, in university departments to create and share environmental knowledge with youth

Provide adults who work with youth access to subject matter/content resources and methods.

Provide adults who work with youth strategies for supporting the development of life skills

Involve youth in visits to college and university campuses

Provide adults who work with youth strategies for providing safe environments

Provide adults who work with youth strategies for forming youth/adult partnerships

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

Extension	
Direct Methods	Indirect Methods
<ul style="list-style-type: none"> ● Education Class ● Workshop ● Group Discussion ● One-on-One Intervention ● Demonstrations 	<ul style="list-style-type: none"> ● Newsletters ● Web sites ● Other 1 (Technology (CDs, DVDs, podcasts))

15. Description of targeted audience

Youth from all backgrounds

Adults from all backgrounds (volunteers, parents, collaborating organization staff)

Youth Serving Organizations and Programs from diverse communities (including K-12, Home Schooled youth, and Camps)

Community Coalitions

UMass Amherst Faculty

Faculty from other colleges and universities

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	5081	32943	7662	48925
2008	5081	32943	7662	48925
2009	5081	32943	7662	48925
2010	5081	32943	7662	48925
2011	5081	32943	7662	48925

17. (Standard Research Target) Number of Patents

Expected Patents

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

18. Output measures

Output Target

Single day workshop, class or events

2007: 33 2008: 33 2009: 33 2010: 33 2011: 33

Output Target

Workshop series or educational course

2007: 550 2008: 550 2009: 550 2010: 560 2011: 560

Output Target

Facilitated Group Meetings or Conferences

2007: 19 2008: 20 2009: 20 2010: 20 2011: 20

Output Target

Diagnostic Services

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

Output Target

Site visits

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

Output Target

Other personalized interventions or services

2007: 40 2008: 40 2009: 40 2010: 40 2011: 40

Output Target

Printed material (Newsletters, Manuals, Fact sheets, Calendars)

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

Output Target

Websites

2007: 2 2008: 2 2009: 2 2010: 3 2011: 3

Output Target

Other Computer or web-based Based Delivery (CDs, DVDs, Pod casts)

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

Output Target

Displays

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

Outcomes for the Program

19. Outcome measures

Outcome Text: Awareness created

Outcome Target

Percentage of participating youth that will work with, learn from and value others from diverse backgrounds

Outcome Type: Medium

2007: 50 2008: 50 2009: 55 2010: 55 2011: 60

Outcome Target

Percentage of participating youth that will engage in community service learning

Outcome Type: Medium

2007: 30 2008: 30 2009: 35 2010: 35 2011: 40

Outcome Target

Percentage of participating youth that will practice competent, applied science (e.g., animal husbandry, horticulture, and stewardship of ecological systems)

Outcome Type: Medium

2007: 35 2008: 35 2009: 40 2010: 40 2011: 45

Outcome Target

Percentage of participating youth that will make healthy food and physical activity choices

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participating youth that will be effective in planning, organizing, resource management and record keeping (including financial record keeping)

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participating youth that will be effective team members, communicators, and leaders

Outcome Type: Short

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participating youth that will build successful partnerships with adults

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

Outcome Target

Percentage of participating youth that will adopt behaviors that will help them succeed academically and in the workplace

Outcome Type: Medium

2007: 45 2008: 45 2009: 50 2010: 50 2011: 55

Outcome Target

Percentage of participants who will make effective use of youth development best practices

Outcome Type: Medium

2007: 40 2008: 40 2009: 45 2010: 45 2011: 50

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

Decreasing state and federal funding
 Competition for grant funding.
 Discontinued or reduced funding from the Massachusetts 4-H Foundation.
 Staff lay-offs.
 Faculty and staff over-extended with current work load.

21. Evaluation studies planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)

Description

Focus groups
 Pre/post surveys
 Self-reports
 4-H Records
 School records
 Anecdotal responses

22. Data Collection Methods

- Sampling
- Whole population
- On-Site

Description

{NO DATA ENTERED}