V(A). Planned Program (Summary)

Program # 8

1. Name of the Planned Program

Climate Change: Water and Weather

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
102	Soil, Plant, Water, Nutrient Relationships	15%		50%	
111	Conservation and Efficient Use of Water	40%		0%	
112	Watershed Protection and Management	20%		0%	
132	Weather and Climate	10%		20%	
133	Pollution Prevention and Mitigation	15%		30%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of professional FTE/SYs expended this Program

Year: 2010	Extension		Research	
	1862	1890	1862	1890
Plan	5.0	0.0	7.0	0.0
Actual	3.2	0.0	5.5	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
44130	0	57201	0
1862 Matching	**1890 Matching**	**1862 Matching**	**1890 Matching**
44130	0	57201	0
1862 All Other	**1890 All Other**	**1862 All Other**	**1890 All Other**
254240	0	537769	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Workshops
Agricultural tours of farms and related facilities
Basic and Applied research
Webpages

2. Brief description of the target audience

Commercial agricultural producers
Local municipal officials
Town government volunteers
Homeowners

V(E). Planned Program (Outputs)

1. Standard output measures

2010	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Plan	1200	3500	0	0
Actual	1450	3500	0	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2010
Plan: 0
Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2010	Extension	Research	Total
Plan	1	4	
Actual	1	5	6

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Fact sheets, bulletins and newsletters

Year	Target	Actual
2010	15	20

Output #2

Output Measure

- Training manuals and instructional CDs developed

Year	Target	Actual
2010	2	2

Output #3

Output Measure

- News releases/articles

Year	Target	Actual
2010	10	15

Output #4

Output Measure

- Websites developed

Year	Target	Actual
2010	1	2

Output #5

Output Measure

- Books and monographs

Year	Target	Actual
2010	0	0

Output #6

Output Measure

- Conference abstracts

  Not reporting on this Output for this Annual Report

Output #7

Output Measure

- Workshops and conferences hosted

Year	Target	Actual

2010	4	8

Output #8

Output Measure

- Presentations and short courses

Year	Target	Actual
2010	50	45

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Adoption of recommended sustainable landscape/turf BMP approaches by defined commercial and/or residential target audiences (% of target population)
2	Development of new models
3	Number of agricultural nutrient management plans adopted by defined target audience
4	Number of rain gardens installed by defined targeted audience/s
5	Awareness of recommended sustainable landscape/turf BMP approaches by targeted commercial and/or residential audiences (% of audience)

Outcome #1

1. Outcome Measures

Adoption of recommended sustainable landscape/turf BMP approaches by defined commercial and/or residential target audiences (% of target population)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The issue of using pesticides is controversial, and at the same time pesticides are an important tool used in pest management for public health, property and water protection and food production. The State of Connecticut requires that individuals using restricted-use pesticides on their own property or property which they rent for agricultural purposes become certified as private pesticide applicators. Individuals who hold themselves out for hire to apply any type of pesticides are required to be certified as commercial applicators. All applicators must maintain their certification by earning re-certification credit at educational programs. Each applicator must earn 12 educational credits in five years to qualify for recertification. One credit equals one hour of instruction on pesticide safety education and pest management. The Pesticide Safety Education Program provides educational programs for recertification of private applicators and commercial applicators, and initial certification education for Ornamental and Turf and Golf Course Superintendent?s commercial certification. Additionally, pesticide safety education is provided to commodity groups, the general public and Master Gardeners volunteers

What has been done

The pesticide safety education program provided 18 workshops, seminars and demonstrations providing re-certification credits for all certified applicators helping them achieve the 12 hours of education credits necessary for recertification. The supervisory commercial ornamental and turf category represents the greatest number of commercial applicators in the state (48%). The demand for training in this category is great. The PSEP offers three formal short courses, or 16 sessions, to educate prospective applicants for certification in these categories. Other formal and informal programs about pesticide safety where presented to specific commodity/grower, green industry groups, Master Gardeners, and other groups and the general public.

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #2

1. Outcome Measures

Development of new models

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	1	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

What has been done

Results

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
112	Watershed Protection and Management
132	Weather and Climate

Outcome #3

1. Outcome Measures

Number of agricultural nutrient management plans adopted by defined target audience

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	10	18

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
Farmers are under increasing pressure to protect the environment. Recent research has shown that soils can become saturated with phosphorus (P). When this happens P becomes soluble and can move with rain runoff in to streams. P concentrations in streams at the parts per billion level, have been shown to increase algae blooms and eutrophication of surface water. If farms cannot learn to manage their farms without polluting the environment they will be forced out of business, and Connecticut consumers will pay more for food to be imported from out of state.

What has been done
Farms collect data to document their crop management practices for the first (baseline) year. Soil samples and other tests are conducted to document baseline conditions on the farm Once background data is collected farms are presented with management plans to manage crop nutrients to meet the agronomic needs of the crop while at the same time minimizing the risk of environmental pollution. Plans consist of field by field recommendations for nutrient applications that may require adjustments in the rate of application, timing of application or in some instances a prohibition on applying nutrients to given fields if the soil already has sufficient nutrient levels. Some farms are forced to move manure off the farm ? either because the farm doesn?t need the nutrients or the farm chooses not to haul the manure to the distant fields that can make use of the nutrients.

Results
Decreased Phosphorus applications by 93,377 pounds
Percent of fields receiving excess N 31 (93 in 2007)
Percent of fields receiving excess P2O5 39 (90 in 2007)
Percent of fields receiving excess K2O 50 (70 in 2007)

1 farm invested $200,000 in manure separation technology to remove P2O5 from its liquid dairy

manure. Raw manure flows to a screw press to remove bulk solids for use as bedding. Separated liquid flows to a centrifuge for further solids removal. 60% of the phosphorus is removed by the 2 stage process. This will allow the farm to spread more gallons of manure per acre, decrease their road miles hauling manure, saving fuel and greenhouse gas emissions. Detailed analysis of the savings will not be available until the manure is spread in the spring of 2011.

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

Outcome #4

1. Outcome Measures

Number of rain gardens installed by defined targeted audience/s

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Awareness of recommended sustainable landscape/turf BMP approaches by targeted commercial and/or residential audiences (% of audience)

2. Associated Institution Types

- 1862 Extension
- 1862 Research

3a. Outcome Type:

Change in Knowledge Outcome Measure

3b. Quantitative Outcome

Year	Quantitative Target	Actual
2010	15	0

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)
{No Data Entered}

What has been done
{No Data Entered}

Results
{No Data Entered}

4. Associated Knowledge Areas

KA Code	Knowledge Area
102	Soil, Plant, Water, Nutrient Relationships
111	Conservation and Efficient Use of Water
112	Watershed Protection and Management
133	Pollution Prevention and Mitigation

V(H). Planned Program (External Factors)

External factors which affected outcomes

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

Brief Explanation

V(I). Planned Program (Evaluation Studies and Data Collection)

1. Evaluation Studies Planned

- After Only (post program)
- Retrospective (post program)
- Before-After (before and after program)
- Comparisons between program participants (individuals, group, organizations) and non-participants

Evaluation Results

Key Items of Evaluation