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PROJECT SUMMARY

Title: Environmental Management Systems (EMS) – An Interactive EMS based Toolkit to Promote Sustainability within the Turfgrass Industry.

Location: Statewide (Michigan)/Regional/National

Applicant: Michigan Department of Environmental Quality (MDEQ)

Partners: Golf Course Superintendents Association of America, Michigan Turfgrass Foundation, Michigan Golf Course Owners Association, Michigan Golf Course Superintendents Association, Michigan Turfgrass Environmental Stewardship Program, Michigan Clean Corporate Citizen Program, U.S. Environmental Protection Agency (U.S. EPA) National Performance Track Program.

Project Manager: Mr. Jeff Spencer
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Total Project Cost: $269,898

Project Period: October 1, 2008- September 30, 2011

Project Abstract:
This project will focus on the development of the first interactive Turfgrass Environmental Management System (EMS) for schools, etc. To date, there has been very little concerted effort to unify environmental practices within the industry, which has placed certain segments of the population at risk. There are known environmental and health issues related to the application of pesticides and fertilizers, resulting in unhealthy exposures to potentially hazardous or toxic materials.

The MDEQ in partnership with the golf industry and the Michigan Turfgrass Environmental Stewardship Program will develop an EMS and provide training specifically designed for turfgrass related facilities and institutions. The golf industry has advanced environmental stewardship within the turfgrass industry. Following the completion of the interactive EMS toolkit, the MDEQ will distribute and promote the toolkit by utilizing our existing relationship with the golf industry. The toolkit will be introduced to other turfgrass management facilities, such as school districts; public, collegiate, and professional athletic fields; the landscaping industry; resort management; local government; and other related green industry sectors.

The Turfgrass EMS will concentrate on priority environmental issues within both the Region 5 and national objectives for watershed management and non-point source discharges, and will adapt itself to support the U.S. EPA target issues, such as water and resource use as they relate to the turfgrass industry. Expected outcomes will be increased compliance, reductions in pollutants from non-point sources, increased participation in environmental stewardship, and increased protection of vulnerable populations.

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Certification of State Agency Support from the Highest Level:
The MDEQ Director Steven E. Chester is aware of and endorses this proposal. If this proposal is selected, a letter of endorsement will be provided with the final work plan.

Project Narrative

The project focuses on the need for cooperative and consistent regulatory compliance for the turfgrass industry. To address this need, this project will develop an interactive EMS and provide training specifically designed for turfgrass related facilities and institutions. The EMS for the turfgrass industry will be based on the well-established principles of EMS protocols and will incorporate both regulatory compliance and pollution prevention principles. Currently, a gap exists between turfgrass professionals in golf and professional sports and those who maintain turfgrass and landscapes at a variety of locations (schools, public/private facilities, universities, parks, and others). This project will establish a relationship between turfgrass professionals associated with the golf industry and their counterparts typically associated with lawn maintenance. This project will provide a vehicle to unify environmental practices that will benefit not only the individual business but the industry as a whole. Additionally, this project will help to advance the initiatives that seek to green Michigan.

There have been isolated successes for employing EMS within the golf industry, but widespread acceptance and/or implementation has not evolved. Many of the obstacles encountered thus far reflect a lack of understanding of the benefits and their potential impacts.

Project Objectives

The main objectives that will initiate change for the turfgrass industry through this project are:

1. Widespread acceptance of the Turfgrass EMS by golf course superintendents, owners, and club managers;
2. Relying on expertise from golf professionals to mentor others in the turfgrass industry;
3. Tracking environmental results through both qualitative and quantitative measures;
4. Having a positive impact, both directly (reduced exposures) and indirectly (education) on vulnerable populations; and
5. Utilization by multiple sectors within the turfgrass industry.

This project will also address several key U.S. EPA factors within the innovations grant strategy:

- To go beyond a single facility experiment and provide change that is “systems-oriented.”

This project does not reinvent the wheel; it will take a proven “system” for regulatory compliance and sustainable operations and adapt it to a specific industry. The turfgrass industry with its broad base of support has provided services to multiple sectors and is poised to move to the next level of environmental stewardship protection.

- Provide better results from a program, process, or sector-wide innovation.

This program will provide comprehensive results along with data from interactions with others involved in sector-wide innovation initiatives. This program will report on not only implementation by different sectors within turfgrass, but also on specific populations affected within each (i.e. school districts -- number of children). The sector wide innovation will utilize the

expansive knowledge and proactive outlook contained within a specific sector of the turfgrass industry -- golf course management -- and adapt it to other turfgrass entities.

- Develop a highly transferable turfgrass environmental management system and outreach materials that can be utilized by states, U.S. territories, and tribes.

Building on the consistency and flexibility of an EMS and the high level of participation by turfgrass professionals throughout the country, this project's main objective will be to disseminate the EMS to states, U.S. territories, and tribes to facilitate its adoption and utilization.

Compliance with local, state and federal environmental laws is often complex and can be challenging for this industry. The international environmental standard, ISO 14001:2004, with its major compliance and pollution prevention components, lends itself well as an underlying structure for the Turfgrass EMS. As an incentive for development and implementation of the Turfgrass EMS, discussions on the question of regulatory flexibility and public recognition shall take place. The U.S. EPA National Environmental Performance Track program and similar state innovative programs could be the vehicle to deliver regulatory and recognition incentives.

This project will address several key U.S. EPA regional and national priorities during its implementation and evaluation.

Specifically, under the Region 5 priorities, the following will be addressed:

1. By developing and implementing an EMS for turfgrass, water resources will be protected and conserved by supporting alternative non-point source activities. Using the EMS approach (voluntary/regulatory), watersheds will be better protected through local mentoring between golf facilities and local schools and parks;
2. The Turfgrass EMS will further promote stewardship activities through increased conservation of water and energy; and
3. The teamwork and collaboration that will create human capital will benefit humanity and lead to business sustainability long after the grant project is completed.

National priorities specific to Goal 5, Compliance and Environmental Stewardship, will be addressed as follows:

- Objective 5.2 - Improve environmental performance through pollution prevention and other stewardship practices.

The Turfgrass EMS is about increasing efficiencies through enhanced environmental performance. It will lead to reduced pollutant loads, conserved resources through more efficient operations and cooperation, and accelerated stewardship activities both at the facility level and throughout the industry sector.

By committing to a consistent, user-friendly design, the industry will achieve more reliable environmental results, increase participation, and potential significant cost savings.

Developing public/private partnerships are key to the success of this project. In the introductory stages of this project, committed and/or potential collaborative partners include the:

- Golf Course Superintendents Association of America – Will provide assistance in the design, implementation, and evaluation of the Turfgrass EMS.
- Michigan Turfgrass Foundation – Will provide design, implementation, and evaluation of the Turfgrass EMS.

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- The Michigan Turfgrass Environmental Stewardship Program – Will provide staffing, design, implementation, and evaluation of the Turfgrass EMS.
- Michigan Golf Course Owners Association.
- Michigan Golf Course Superintendents Association.
- Michigan Landscape and Nursery Association.
- Michigan Clean Corporate Citizen Program.
- The U.S. EPA National Performance Track Program.

Proposed Project Work Plan and Time Frame: The proposed project consists of three overlapping phases that will be implemented over a three year time period:

Phase 1)
Introductory Phase – A cross section of turfgrass facilities will be surveyed to establish a baseline of their current environmental practices (i.e. golf facilities, schools, universities, local government, and athletic fields), such as:

- Pesticide/herbicide handling, storage, and application
- Fuel Storage
- Chemical Storage (paint, solvents, cleaning products)
- Water Usage (irrigation)
- Parts Washing Practices (solvent vs. aqueous)
- Waste Management Practices (facility and turfgrass)
- Use of Alternative Products
- Green Cleaners
- Renewable or Reused/Reconditioned Equipment/Products
- Energy Efficient Equipment/Products
- Alternative Energy (bio-based fuels, wind energy, solar energy, geo-thermal)
- Stormwater and Runoff Management (including re-usage)
- Staff Training
- Recordkeeping

Baseline data will be collected by each facility with the goal of identifying aspects and impacts, developing a ranking system to determine significant aspects, and designing goals and objectives to manage those that have been determined to be significant

Time Frame: Year One – Grant Award + 180 days

Phase 2)
Turfgrass EMS Development Tool -- Design and implement an interactive Web-based tool along with training materials for the turfgrass industry. This tool will consist of an interactive format which will allow the user to answer facility specific questions regarding their operations and when finished, a completed EMS file for their property will have been created. Following the development and testing phases of the interactive Turfgrass EMS tool, a series of workshops will be held on EMS training for interested parties. The training will be offered statewide/regionally and materials will also be posted on-line. Through this grant, the MDEQ will develop new materials and implement training geared to promote sustainability through EMS implementation within the turfgrass industry.

Building on previously developed comparison matrices between the ISO 14001 and the Michigan Turfgrass Environmental Stewardship Program components, the Turfgrass EMS materials would include industry specific aspect and impact examples, recordkeeping templates,

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direct support features, peer support, mentoring, and all of the necessary factions to comply with the ISO 14001:2004 standard.

Federal and State regulatory permitting and compliance staff will also have the opportunity to learn more about these environmental tools and incentive programs. Field staff and inspectors can upgrade their skills to include a basic understanding of the EMS, auditing requirements, and economic benefits. Training will build knowledge of ongoing voluntary community-based environmental projects, partnering with local schools and governments, nonprofit organizations, and industry. Providing internal and external training and other technical assistance over the grant period will increase the understanding of the Turfgrass EMS. Activities include:

- Develop assistance/training for first-time EMS development.
- Develop on-line assistance/training for maintaining the EMS (internal and external auditing, results reporting, management review, new goals/projects development, etc.).
- Develop on-line assistance for facilities wishing to join the U.S. EPA and/or state incentive programs with forms, examples, and guidance (i.e. Michigan Turfgrass Environmental Stewardship Program, Michigan Clean Corporate Citizen, Michigan Business Pollution Prevention Partnership, and the U.S. EPA Performance Track).
- Provide on-site assistance, as needed, on EMS development and EMS implementation.
- Provide selected regulatory staff with an overview of EMS auditing, results reporting and improved compliance resulting from this project.

Time Frame: Year One and Year Two -- Then On-going

Phase 3)
Expand Turfgrass EMS training -- To selected industry sectors within Region 5 and beyond, including:

- Athletic fields (municipal/collegiate/professional)
- Local units of government (facilities management)
- Universities (grounds maintenance)
- School districts (grounds management)
- Residential/commercial turfgrass industry (Scotts, TruGreen, etc.)

Time Frame: Year Two and Three, then On-going

Outcomes and Measures of Effectiveness (Environmental Results):

Effectiveness of the project will be measured in several different areas as a direct result of this project: 1.) Program Growth and Improvement, 2.) Resource Conservation, and 3.) Data Reliability and Aggregation:

1. Program Growth and Improvement:

Quantifiable data would include:

- The number of active participants during the developmental stages of the project will be tracked and tabulated for future collaborative projects.
- The number of Turfgrass EMS toolkits that have been distributed, accessed, or presented.
- The different turfgrass sectors represented in the number of toolkits utilized.
- Total acreage covered under the Turfgrass EMS
- Total numbers of vulnerable populations covered by the Turfgrass EMS
- Numbers of participants who actively engage in further stewardship activities

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    - Performance Track
    - State voluntary stewardship programs
  - Water bodies protected

2.

2. Resource Conservation:
   - Quantities of resources conserved to include:
     - Energy
     - Water
     - Waste materials
     - Pesticide/herbicide
     - Fertilizers
     - Oils/Greases
   - Recycling programs established

3. Data Reliability and Aggregation:

A system for tracking measurable results will be employed to catalog on-site changes based on the development and implementation of a Turfgrass EMS. This database will act as a single source for baseline data and will serve to track targeted results. These data will be monitored on a regular basis and could be aggregated by state, region, or media. Outcomes from data reporting will allow for aggregation for the turfgrass industry as a whole, but will also allow us to examine which specific sectors within turfgrass may need additional resources to be successful, and ultimately lead to more accurate agency analysis.

This will be accomplished by taking advantage of the existing Pollution Prevention Information and Grant Management (P2IGM) tracking database. This database is accessible through a simple registration process utilizing username and password. This database allows for participants to share innovative projects from peer to peer (i.e. a golf facility creates an innovative equipment wash station and shares this information via the database). In addition, the site would serve as a catalog of potential projects and help individual facilities track their progress toward goals they have identified in their Turfgrass EMS. This data would also be useful in the creation of case studies to be made available to the public.

Budget Narrative

The Funding request is for $269,898 in a State Innovation Grant for fiscal year 2009. The Project Budget covers Direct costs: salaries, fringes, contractual, travel, supplies, and incidentals; and Indirect costs, including information technology.

Professional salaries in the budget support the MDEQ staff time committed to the project's implementation. Grant funds will support the Pollution Prevention and Compliance Assistance Section Manager, 5 percent; Pollution Prevention Programs Unit Manager; 5 percent; Pollution Prevention Program Specialist, 30 percent; Pollution Prevention Program Analyst, 15 percent, Administrative Support, 5 percent, and Web Coordinator, 5 percent. The fringe benefit rate for the MDEQ is 56 percent (55 percent general and 1 percent terminal leave).

The travel budget includes the costs of travel within Michigan to consult with partners regarding this project, and to deliver training and provide outreach and assistance services. The budget also includes travel for one staff person to attend the Golf Course Superintendent Association of

America (GCSAA) national conference in 2009 and 2010; which includes air fare, lodging, and meals.

Contractual work will include 150 hours of contract work to develop the Turfgrass EMS interactive guidebook. The printing and publishing costs are associated with the development of case studies, fact sheets, and training materials.

The Michigan Department of Information Technology (MDIT) and Indirect charges are standard charges. The MDIT, 4 percent information technology services charge is a standard charge for all state agencies, and it is based on the total of salaries and fringes. Indirect charge is 16.61 percent and is also based on salaries and fringes.

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Summary Budget Information
Michigan Department of Environmental Quality
State Innovation Grant
Budget Details
10/1/2008 thru 9/30/2011

Financial Information removed by EPA as confidential business information.

Environmental Results Past Performance

The MDEQ, Environmental Science and Services Division (ESSD) administer a diverse array of federal grants to support environmental stewardship and natural resource conservation. The majority of the grant programs within the MDEQ (state and federal funds) are within the ESSD. Over $200 million of joint state and federal funds were passed through the ESSD to Michigan industries and municipalities in 2005, in programs including:

- Brownfield Redevelopment
- Drinking Water Revolving Fund
- State Revolving Fund
- Watershed and Non-point Source Funds

In addition, the ESSD has been the recipient of U.S. EPA funds for development of several pollution prevention programs. Pollution prevention goals include reduction of wastes and toxics through efforts that include recycling, reduction, and reuse. These U.S. EPA funded programs include the following:

ESSD Programs Funded by the EPA	**Grant #**
Green Suppliers Network – Office Furniture Manufacturers	X9965388 -01
Pollution Prevention Program Results Enhancement	NP965387 -01
Promoting Environmental Stewardship at Michigan State Parks	NP965026 -01
Promoting Recycling in the Construction Industry Program	X1-00E00501-0
Pollution Prevention For Schools and Green Suppliers Network Program	NP-00E02201-0

The ESSD has been a good steward of the awarded funds. These programs, as part of all MDEQ grant programs have been audited. The MDEQ was found to be in compliance with the Federal Cash Management Improvement Act, and had no material weaknesses related to internal control over federal programs. There were also no findings related to the financial statements and financial schedules of federal programs. The expenditures have met work plan narratives and agreed upon task and product development expectations. Funds used for any questionable costs have been reimbursed to the U.S. EPA. Quantitative data on pollution prevention results have been provided, when available.

In the project reports, there has been a good faith effort to report truthfully and honestly. Not all grant projects have gone as expected, this has sometimes resulted in our asking for no-cost time extensions and may have produced results other than expected. However, any failure has always been honestly reported and has provided lessons learned for us and others to benefit from. We have adapted as needed and have carried projects to completion. In fact, most of the grant funded projects have not only gone on to become permanent projects supported by the MDEQ on state funds, but some have even won awards from the U.S. EPA and others, as being outstanding programs.

Programmatic Capability

The MDEQ, ESSD, has been providing pollution prevention information, outreach, and technical assistance since 1989. The MDEQ, ESSD, Pollution Prevention Program is a non-regulatory environmental assistance program that emphasizes pollution prevention through voluntary incentive programs, published informational materials, several Internet sites, information and technical assistance, and the integration of pollution prevention into the MDEQ's regulatory functions. This grant would expand resources and encourage collaboration between existing pollution prevention partnership and stewardship programs, by creating a forum for data sharing and dissemination along with an increase in joint training efforts. Our current structure is mainly based on each program's independent operation, which has been very successful to a point. We are now at a crossroad of sorts, all of our stewardship programs can benefit from the successes of each other (i.e. municipalities benefiting from lessons learned in turfgrass, corporations learning from their customers). Existing Web sites will be consolidated where appropriate, so that information is easily obtainable and updated as needed, based on the flow of new information.

Staff Biographical Information:

- Ms. Marcia Horan, Chief, Pollution Prevention and Compliance Assistance Section, ESSD. Ms. Horan has over 17 years experience in manufacturing technical assistance, environmental programs, and grant administration.
- Mr. Robert Jackson, Chief, Pollution Prevention Programs Unit, Pollution Prevention and Compliance Assistance Section, ESSD. Mr. Jackson has over 24 years of experience in regulatory integration and compliance assistance.
- Mr. Jeff Spencer, Pollution Prevention Program Manager/Environmental Quality Analyst, Pollution Prevention and Compliance Assistance Section, ESSD. Mr. Spencer has over 16 years of experience with environmental programs. Approximately eight years in private consulting and nine years working with MDEQ pollution prevention programs and stewardship activities. Over the past several years, Mr. Spencer has worked closely with a number of voluntary pollution prevention programs including: the Michigan Business Pollution Prevention Partnership, Michigan Turfgrass Environmental Stewardship Program, and Michigan Clean Marinas Program.
- Ms. Darlene Harris, ESSD Web Site Manager. Ms. Harris has been designing Web sites for the ESSD since the MDEQ Web site was first launched. Ms. Harris is responsible for all the Web sites posted under the main MDEQ, P2 Web site at: www.michigan.gov/deqp2.