Seven Key Strategies for Fostering State-BMPs for Water Conservation in the Green Industries of Georgia

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1. Identify and enlist key industry individuals that will serve as spokespersons.
2. Direct as your primary focus the development of a proposed State-BMP water-use and conservation plan.
    - Formally adopt the State-BMP approach as the best model for water-use efficiency and conservation for all water users as part of your mission statement.
    - Develop a proposed State-BMP plan that deals with the most important, specific issues for the Green Industry.
    - Evolve a presentation and promotion plan for your proposed State-BMP plan that is targeted to various audiences starting with political and regulatory groups.
    - Develop a format to continue to interact with political and regulatory groups over a long time period to influence the initial State Water Plan and changes over time.
    - Develop site-specific BMPs templates/guidelines for larger scale turfgrass landscape areas, sod production, and horticulture business enterprises that do not already have such template documents.
3. Develop economic impact information.
4. Formulate an educational program for internal and external audiences.
5. Partnership with others with similar interests and provide leadership in water planning.
6. Present a proposed benchmarking plan to the political and regulatory groups.
7. Initiate a plan to gather and use information on the important environmental functions, recreational contributions, and aesthetic and economic roles that Green Industry products provide to the citizens of Georgia.

Purpose

The purpose of this article is to suggest an ***overall strategic approach*** for the Green Industry through their alliance councils (Urban Agriculture Council and Georgia Allied Golf Council) as they interact with political and regulatory entities for the purpose of ***fostering*** **State-BMPs** (best management practices) policies as the best means for achieving water-use efficiency and conservation for all state water users. The Urban Agriculture Council (UAC) represents greenhouse production, turfgrass production, nursery production, retail horticultural operations, landscape design and contracting, and ornamental horticulture associations. The Georgia Allied Golf Council (GAGC) represents the golf course superintendents, owners, club managers, club golf professionals, and golfer associations. Additionally, this document can be utilized by the UGA College of Agricultural and Environmental Sciences Cooperative Extension, Research, and Educational personnel in their activities to support water conservation efforts by the Green Industry and state. It is immensely important to provide the necessary research support and to educate the Green Industry, public and policy makers on the steps the Green Industry is taking and can take in the future to combat statewide water shortages. It is also imperative to communicate to key

stakeholders how industry-wide adoption of BMPs will enhance water conservation and water use efficiency. This document stresses the theme of unity --- a unified Green Industry voice and a unified water management approach (i.e. BMPs) --- to lessen rigid regulatory pressures on the Green Industry and other industrial water users that hinders job and business growth in the state.

Are We Focusing on the Right Goal?

What we focus on is what we plan for. When under political pressures inherent in water crisis situations, it is easy for the Green Industry to focus on much different goals than the political and regulatory groups – one is on oranges and the other on apples. The political and regulatory government entities have one primary focus – a plan for water conservation. The Green Industry is often focused, however, on other issues, like survival of businesses and enterprises. These entities can "talk past each other" when the Green Industry consistently tries to convince the governmental and regulatory groups of their importance, but does not address the government groups' primary issue (i.e. water conservation). These responses are typical when a water crisis initially occurs in a state or region; but successful Green Industry groups have eventually had to change focus to that of water conservation. The more rapid energies and efforts are adjusted to this key issue, the more effective the influence of the alliance will be.

The fact is that the long term economic sustainability and viability of the Green Industry and many other state industries depends on successfully dealing with water-use efficiency and conservation. Thus, water conservation must be the central focus of the Green Industry planning --- and the industry must proactively bring forth an effective Green Industry water-use efficiency and conservation plan for consideration and influence within political and regulatory groups. This approach is directly targeted to the primary goal of educating and influencing key governmental groups and state citizens on measures the Green Industry is taking to conserve and efficiently utilize water resources. During the process, the Green Industry will have ample opportunity to present other points of concern such as economic importance of the industry and how the industry has been adversely economically impacted.

By bringing a comprehensive Green Industry conservation plan to the table, government(s) will be more amenable to listen and will include the Green Industry in the statewide water management decision-making process. Since all business entities that use water (manufacturing, retail, wholesale, industrial, production, etc.) must eventually adopt and implement an indoor/outdoor water management plan for the state, ***the Green Industry can actually provide leadership to political and regulatory agencies*** by fostering development, acceptance, and implementation of the BMPs approach for all state water users as the "gold standard" – i.e., "best" management practices. By becoming an ally of the city, county and state governments of Georgia, the industry can prove that it is not a 'water user' but rather a 'water conserver' and leader in environmental stewardship. Vickers (2002) has developed and excellent reference and overview for BMPs across all water users.

A successful plan is essential for water-use efficiency and conservation. Two general types of management philosophies (or plans) have evolved for addressing complex, individual environmental problems, including water conservation, namely:

- A rigid regulation approach that is neither business-friendly nor environmentally sound (2).
- A best management practices (BMPs) approach based on principles that have evolved over 30 years from the U.S. EPA's Clean Water Act BMPs program for water-quality protection.

Due to the success of this approach for protection of water quality, the BMPs approach has been increasingly adopted for water-use efficiency and conservation as well as for management of other environmental issues. The Council for Agriculture and Science Technology (CAST) (2) has encouraged this approach; and currently, Colorado (7), California (1), Texas (8), and San Antonio, TX (6) have BMPs based water conservation programs at the State, water district, or community regulatory levels.

For the purposes of this article, we will call the state, water district, or community BMPs, ***"State BMPs"*** for water-use efficiency and conservation. Common components of a State BMPs plan are outlined in Table 1, while components of site-specific BMPs are noted in Table 2 with golf courses as the example, as this is the only group in Georgia that has developed and implemented site-specific BMPs. The items noted in Tables 1 and 2 are those important for the Green Industry; however, for other industrial, manufacturing, or business water users there would be similar state and site-specific BMPs that could be listed (Vickers, 2002). In the remainder of this article, we focus on State BMPs relative to the Green Industry. State BMPs have three important attributes (4). First, they define the water management region and the regulatory authority for that region. It is not unusual for a state to invest overall water management authority in a department of natural resources. However, the department of natural resources may allow regulation at the level of a water district or metropolitan area. The water district is normally a major water shed area, and it is often best to allow latitude in management at this level because one water shed may receive rain, while another may not. Second, ***a State BMPs plan denotes the regulations for water management at all area levels down to specific sites.*** Regulations (that is, the State BMPs) would detail the various water-conservation and water-efficiency measures within the water district. Third, state BMPs encourage or mandate all water users to operate on BMPs principles. All types of large irrigated sites, such as golf courses, athletic fields, sod production fields, nursery production sites, greenhouse operations, and institutional grounds would each be expected to have site-specific BMPs (Table 2).

Planning Strategies for Fostering a State-BMPs Water Conservation Plan

Successful State-BMPs for the Green Industry do not just happen but must be fostered by the Green Industry. Regulations that are favorable to the sustainability of businesses (jobs and economic health) and the environment do not automatically arise within the political or regulatory realms. While the State-BMPs approach is being used in key states, it is not yet the "norm" and, therefore, government groups do not have an existing "package" on the shelf to pull off and use – as would be true for State-BMPs for water quality issues such as pesticide, nutrients, or sediment. Thus, the Green Industry must proactively develop and present such a plan that is tailored to their state for interaction with the political and regulatory entities at the local to state level.

What are key strategies for positive interaction in the political and regulatory realms toward development of favorable State-BMPs? The key strategies outlined below are based on the experience of the authors and other groups (1, 2, 3, 6, 7, 8, 9, 10, 11):

First, identify and enlist key industry individuals that will serve as spokespersons. These individuals are normally key leaders within various components of the alliance; but may also include a lobbyist for the alliance. From within this group, a primary spokesperson should be identified. Enlist partners from within all components of the Green Industry that have technical, educational, research, or financial strengths.

Second, as the alliance's primary focus, concentrate on fostering a State-BMPs water-use and conservation plan. This should entail several aspects, such as:

- **Formally adopt the State-BMPs approach as the best model for achieving water-use efficiency and conservation for all water users as well as the Green Industry** --- the details do not need to be worked out at this stage, but adoption of the concept provides the necessary direction for further activities. This could be stated in the form of a mission statement.
- **Develop a proposed State-BMPs plan for the Green Industry that deals with the most important, specific issues for the industry** (see eNewsletter 1, November 2007) (4). An individual or committee should be appointed for this task along with identification of key resource persons and resource materials such as those listed at the end of this article. This is a place that University personnel working with the Turfgrass/Green Industry commodities can assist as resource individuals. Political and regulatory entities normally value integrated, science based information on issues that arise out of universities or science organizations such as CAST (2). Two State-BMPs versions should be developed, a full version and a 1-2 page Executive Summary version.
- **Evolve a presentation and promotion plan for the proposed State-BMPs plan that is targeted to various audiences starting with political and regulatory groups.** In initial contacts, present the concept and BMPs essentials in summary form consisting of 1-2 pages, since the concept must be readily understood and a large document at this stage will often not be read. Tables 1 and 2 can give guidance in summarizing the concepts. However, in the summary document, it should be stated that similar water conservation programs do exist in key states or communities and that the BMPs approach is based on the same "gold standard" environmental management model used for water quality issues over the past 30 years. The summary format is also an excellent document to educate within the Green Industry (so that there is a wide-spread understanding of this approach) and for media use.
- **Develop a format for long-term interaction with political and regulatory groups to influence the initial State Water Plan and changes over time.** Water issues are not resolved in a single plan that then stays static; but the process normally evolves over several years.
- **Develop site-specific BMPs templates/guidelines for Green Industry enterprises that do not already have site-specific template documents – such as larger scale turfgrass/landscape areas, sod production, nursery production, greenhouse production, retail operations, etc.** The golf course industry has such a template --- one is an on-line template developed by the Georgia Golf Course Superintendents Association (GGCSA), and the second are the web-based packages used in the Golf Course Superintendents

Association of America's (GCSAA) BMP training courses (3, 5). These can be modified for the sports field, sod farm, and general grounds components of the industry. Site-specific BMPs are a core part of a State-BMPs Plan for large irrigated sites (Table 1). Part of a whole facility site-specific BMPs is the indoor water conservation measures which are similar across industries. After development, there should be a plan for implementation within each of these industry areas. Copies of these documents can be located and downloaded from the UGA turfgrass webpage at www.GeorgiaTurf.com.

Third, develop and update economic impact information. When in the midst of a water crisis, politicians often react to the immediate political pressure of media and activists. But, crisis management is not a plan for long-term economic stability and viability of the state economy. Eventually, the adverse effects of water regulations on jobs and the economy arise as important considerations – especially if there are cases where crisis management without a good State Water Management Plan has resulted in businesses closing down and job losses. Two types of economic information are important: a) economic survey data on the size, extent, jobs, and economic (direct and indirect) importance of the Green Industry and each component, and b) information on the adverse effects of the water crisis on jobs and the economy. In this instance, job loss should not be solely reported as from within a single segment of the industry, such as landscapers; but as jobs lost out of the community and local economy that is providing goods and services and purchasing goods and services. These "jobs" are people within the community who are their neighbors and who are like all citizens – attempting to provide their families with basic needs, sending their children to school, etc. It may be beneficial to document whether those who lost businesses or jobs would go back into the same enterprise if the same regulatory climate continues or if a more favorable one evolved. A related point is that the likelihood of a new business filling the void left by one that went out of business is not very probable if there is a high degree of uncertainty about the same types of crisis water management decision occurring again. As with the proposed State-BMPs document, there should be definite plan for use of the economic information and individuals identified who are responsible for dissemination.

Fourth, develop an educational program for internal and external audiences. This point has been noted in the previous strategies but is highlighted again as an essential point. Educational program needs will be short-term and long-term. The University of Georgia Cooperative Extension Service with its county delivery system along with CAES research scientists have as their core mission provision of continuing education and research for Green Industry enterprises, including the on-going water-use efficiency and conservation needs. Existing educational programs can be incorporated into the short and long term educational program needs such as The Georgia Certified Landscape Professional (GCLP) program and Georgia Master Gardener program.

Five, partnership with other industries of similar interests and provide leadership in water planning. As previously noted, all water users will eventually require a water-use efficiency and conservation plan that will be acceptable within the political and regulatory arenas – each industrial, agricultural, commercial, and institutional as well as domestic indoor and outdoor water users. Such plans will entail State-BMPs and site-specific BMPs. While the specific practices and details may vary for each entity, there are many concepts that are very similar; and a holistic, science-based, BMPs model is a common sense model for all water users. Partnerships may also include programs

and action strategies with key coalitions of other water users or environmental groups that support a BMPs approach, such as Audubon International, CAST, etc.

Sixth, present a proposed benchmarking plan to the political and regulatory groups.
In the initial efforts toward a Georgia state water plan in the early 2000s, it became apparent to the politicians and regulatory agencies that they lacked appreciable information concerning water use and needs from various water users. There were considerable finances directed toward obtaining such "benchmark" information for agricultural water use but not for Green Industry water use. Key benchmarking information is being gathered nationally for the golf industry by the GCSAA. While such information is very important, lack of it is not a reason to delay adoption of a State-BMPs approach for water conservation. When the US EPA initiated the BMPs plan for protection of water quality, they did not have all the answers, but have gained considerable information over the past 30 years to fine-tune and improve the initial BMPs.

Seventh, initiate a plan to gather and use information on the important environmental functions, recreational contributions, and aesthetic and economic roles that Green Industry products provide to the citizens of Georgia (see Table 10.2 in reference 5 for information related to turfgrass). Special attention should be given to the environmental benefits. It is possible to integrate this strategy into the sixth (benchmarking) strategy, especially if state funding for the information is available.

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Table 1. This table contains an outline of common **State BMPs** for an urban water conservation plan (1, 6, 7, 8, 9, 10).

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1. Identify water conservation goals.
2. Develop water-use profiles for water users and forecasting for future needs.
3. Identify and evaluate all water conservation measures.
4. With consideration of items 1-3, develop a community or water district BMPs plan including well-defined, logical water restriction levels with stated triggers to move from one level to another. Usually 1-2 triggers are used and these are well publicized. Both water restriction levels and the requirements for triggers should be consistent with state and water district BMPs practices.
5. Infrastructure improvements. Public system water audits, leak detection and repair. Public water delivery systems are often the source of major water loss in many urban areas. For golf courses and other water users, water audits, leak detection, and repairs would be part of their site-specific BMPs.
6. Indoor water conservation measures, including all public buildings and facilities.
7. Conservation pricing with water costs rising above the normal use level for a user that is operating under site-specific BMPs.
8. Stakeholder cost and benefits. Evaluation of voluntary and regulated water conservation measures on all stakeholders – i.e., community jobs, economy, environmental. This evaluation should be not only when selecting initial conservation practices but also in terms of how fairly and uniformly different businesses are treated, especially in times of water crisis.
9. Encourage alternative irrigation water sources especially by large landscape areas such as golf courses.
10. Consider potential for water conservation incentives such as rebates for conservation devices, systems, and measures.
11. Develop an on-going public information and education program based on a positive attitude that fosters voluntary actions by individuals to achieve water conservation. Avoid making every citizen a “water cop”. Conservation plans and programs are long term and their nature influences the community attitudes and actions.
12. School based educational programs that foster understanding of BMPs.
13. Foster development of site-specific BMPs for all industrial, commercial, institutional, agricultural, and irrigation landscape water users. See Table 2 and Carrow et al. (2005b; 2007) for components or strategies within a site-specific BMPs plan. All public owned sites that are irrigated should be models for development and use of site-specific BMPs.
14. Develop a monitoring and reporting program that entails all water users. Monitoring requirements should focus on the essential information and not become burdensome for water users by requiring unnecessary information. Overall water-use efficiency and conservation are the important aspects and not monitoring every component within a site-specific BMPs plan. Public facilities should not be exempt from monitoring and reporting.

Table 2. Components or key strategies in a **site-specific BMPs** program (2).

1. Initial Planning and Site Assessment for a Water Conservation Program.
2. Alternative Irrigation Water Sources.
3. Irrigation System: Design, Installation, and Maintenance.
4. Irrigation Scheduling For Water Conservation: Tools and Approaches.
5. Selection of Turfgrass.
6. Turfgrass Facility Design for Water Conservation.
7. Additional Management Practices for Water Conservation.
8. Clubhouse, Maintenance Facility, and General Grounds Water Conservation Strategies.
9. Benefits and Costs of Regulations for All Stakeholders
10. Education – Internal and Outreach.
11. Monitoring and Modifying the BMPs Plan.

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Acknowledgements. We appreciate review and comments from Drs. B. Pennisi, P. Thomas, and G. Wade, State Extension Specialists in Department of Horticulture, UGA.