

CHECKLIST OF CERTIFICATION FOR SUSTAINABLE LANDSCAPES IN GEORGIA

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Abstract. The Georgia Comprehensive State-wide Water Management Plan (SWP) was developed in 2008. The purpose was to balance increasing and sometimes conflicting demands on the state's water resources. The plan recognizes water conservation as one of the most cost-effective practices for protecting and managing water quality in state rivers, streams and aquifers. The SWP requested that the Georgia Department of Natural Resources create a guidance document, Water Conservation Implementation Plan (2009), for greater water use efficiency in Georgia's diverse water use sectors. One sector of this plan addresses water conservation for landscape irrigation. A benchmark within this sector is to develop a checklist and certification for sustainable landscapes. The overall objectives of this project are to secure funding for the project, create a statewide (with a regional emphasis) education and outreach program for sustainable landscapes, implement the program and evaluate the effectiveness of the project. The objectives of the statewide education and outreach program for sustainable landscapes are to:

- Improve water quality through landscape best management practices
- Enhance water use efficiency for landscape irrigation
- Build an army of sustainable landscape champions
- Construct regional demonstration to improve water quality and water efficiency on site and to educate citizens on the benefits of sustainable landscapes

INTRODUCTION

Through successful educational campaigns implemented over the past several years, Georgians have become increasingly aware that the chemicals and materials they place on their lawns and landscapes affect the quality of the water downstream of where they live through nonpoint source (NPS) pollution. Many streams

and aquifers have benefited from the household mantra, "We all live downstream."

The time has come for Georgians to integrate thoughts of water quality with water quantity. The Georgia Statewide Water Management Plan is built around an integrated water policy, so must Georgia's everyday landscape management activities. These activities should begin during the development phase, the initial landscape construction and installation. Georgia's residential and commercial landscapes must be built around an integrated philosophy that sustainable landscapes can be beautiful, water efficient and can help improve the quality of our resources.

Georgia has experienced rapid population growth since the 1970's. Over the next two decades, the state's population is projected to grow by an additional 4.6 million people. Two out of five Georgians are projected to live in the 10 county metro-Atlanta region. With rapid development, water quantity and quality are negatively impacted.

As development occurs vegetated acreage is lost and impervious surfaces and compacted soils result in polluted stormwater runoff. NPS pollution such as nitrogen, phosphorus, suspended solids, metals, pesticides and bacteria are sources of contaminants found in Georgia's 303(d) list of impaired waters (iaspub.epa.gov/tmdl/attains_state.control?p_state=GA&p_cycle=2006&p_report_type=T#causes_303d). The physical, chemical and biological characteristics of streams, rivers and lakes can become unbalanced when NPS pollutants are introduced resulting in algal blooms, growth of unwanted weeds and fish kills due to decreased dissolved oxygen and nutrient loads. Sediments from eroded soil can be carried in stormwater runoff and create temperature changes as it is deposited in water bodies resulting in loss of aquatic flora and fauna habitat, survival and reproduction. Water quality problems associated with NPS pollutants are creating a need for changes in the way landscapes are designed, installed and maintained.

With population and economic growth, our state can expect greater demands and withdrawals from our water resources. While abundant, Georgia's water resources are finite. Improperly managed withdrawals and excessive

consumptive use can negatively impact Georgia's water bodies, our water uses and the environmental services our waters provide. By prioritizing efforts to conserve water and maximize water efficiency in our landscapes, we can protect our finite resources without causing harm to the economy or the quality of life that current and future Georgians enjoy.

Previous Work. This project seeks to implement a statewide educational program modeled after Alabama Smart Yards (2009) and Florida Yards and Neighborhoods (2006). Both programs are excellent sources of educational material; however, a program needs to be developed unique to Georgia's environmental conditions such as geography and climatic zones.

Description. The Sustainable Landscape Certification Checklist Program or 'Georgia Yardstick' will be designed to be used by homeowners, businesses and nursery professionals. The 'Georgia Yardstick' will be a simple, clear and impactful tool which will award landscapes points or inches for on-site best management practices implemented. After achieving 36 inches the landscape will achieve a certificate which will be a source of pride for home or business owners and will be a marketing tool for nursery growers. This educational program will target potential trainers from The University of Georgia Cooperative Extension who will train Master Gardeners and other landscape professionals. Master Gardeners and other landscape professionals. These groups will in turn evaluate landscapes for certification. Regional demonstration sites will be established with the proper best management practices implemented and used as educational tools.

Sustainable, yet cost-effective landscape management practices have been proven to result in water conservation and reduced NPS pollution. This project will be built around the simple and affordable best management practices (BMPs) that residential and commercial property owners can implement to improve the quality of stormwater runoff from lawns, gardens, and neighborhoods and to help minimize water consumption. The overall goal of this project is to create a program that can empower Georgians to build and maintain landscapes that are water efficient and help improve water quality.

Specific Project Activities:

- "Train the trainers" on sustainable Georgia landscape criteria. These trainers include County Extension Agents, Master Gardeners and representatives of professional landscape and irrigation associations. The training will enable the targeted participants to then educate citizens and business owners in their area on the importance of sustainable landscape design and maintenance.

- Design outreach and educational training material for developers, building off of the ongoing effort in the metro Atlanta area to develop landscape criteria for WaterSense Certified Homes. The demonstration site located in the metro Atlanta region will be a critical element of this developer training program.
- Develop demonstration sites to show citizens and interested parties benefits of implementing the practices described in the sustainable Georgia landscape guide. Demonstration sites may emphasize different benefits, depending on the most critical need for the area (i.e. the nature of the impairment).
- Document, in the most straight forward way possible, the economic impact sustainable Georgia landscape BMPs have when implemented and maintained.
- Utilize the Georgia Yardstick as an educational tool for builders to augment the WaterSense new homes Program Guidelines currently being developed for incorporation throughout metro Atlanta.
- Provide the Georgia Yardstick to all 'WaterSense New Homebuyers' as a guide for maintaining a sustainable landscape.
- Monitor the impact demonstration sites have on water quality, following the BMPs outlined in the guide of sustainable Georgia landscapes.
- Nursery professionals will be educated on timely and practical information associated with the design, installation, and maintenance of nursery industry best management practices and systems.

RESULTS AND OUTPUTS

- Develop a BMP guide for sustainable Georgia landscapes.
- Develop an educational training program for County Extension Agents, Master Gardeners and landscape professionals to certify Georgia Sustainable Landscapes.
- Implement demonstration sites to improve water quality and quantity of nonpoint source runoff from residential and commercial landscapes to be used for education and outreach projects.
- Begin the process for developing BMP's for container grown nurseries.

Measures of Success: The Measures of Success for the proposed project will be both direct and indirect (quantifiable and qualitative measures of success). Quantifiable measures will include any measureable change to water quality and water quantity (i.e. use), demonstrating the effectiveness of the BMP's implemented at the Griffin and Cobb County

demonstration sites. Existing water quality data will be utilized from both locations to establish a baseline. Once a demonstration site has been established and BMP's have been implemented, on-going water monitoring will continue upstream and downstream of each demonstration site for 18 months. This data will be compared to baseline data to evaluate the effectiveness of BMP's.

Indirect measures of success will involve the education and outreach efforts of the project. Such measures will not result in quantifiable improvements to water quality, but will lead to a greater acceptance of sustainable landscape principles and, ideally the implementation of the practices promoted through the program. These measures of success will include the number of County Extension Agents and Master Gardeners trained to train citizens on the principles and practices of sustainable Georgia landscapes; the amount of educational material distributed and/or downloaded from the internet; the number Georgia citizens and professionals exposed to the principles of sustainable landscape (through local training events, presentations and/or local site visits); and a growing number of "certified sustainable landscapes" in Georgia.

CONCLUSIONS

The goal of this statewide project is to educate citizens on implementing sustainable landscapes which will improve water quality and also conserve water. The expected outcome is to positively impact environmental and economic conditions throughout the state.

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