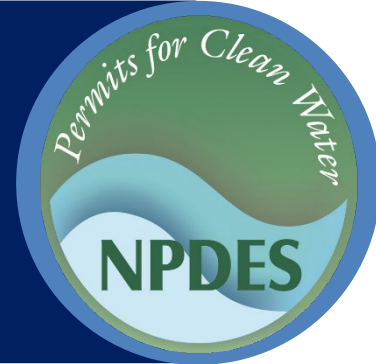




Stormwater Best Management Practice

Landscaping and Lawn Care



Minimum Measure: Public Education and Involvement
Subcategory: Education for Residents

Description

Lawn care, landscaping and grounds maintenance occur in all parts of the country, in all types of climates, and in every type of community from rural to urban. U.S. property owners tend to an estimated 40 million acres of turf each day (Thacker, 2005). To keep all that grass green, residential outdoor water use across the United States accounts for nearly eight billion gallons of water each day (U.S. EPA, 2021). A municipality that is looking to improve water quality may do so by improving common lawn care practices, such as watering, fertilizing, and landscaping lawns and gardens, across its neighborhoods. To do this, it may implement a landscaping and lawn care education program.

Understand Community Knowledge Gaps and Current Practices

To craft an effective education effort, a municipality will need to determine residents' knowledge gaps that may lead to environmentally harmful lawn care practices. Municipalities can do this by **soliciting information from their communities** through community surveys, town hall meetings, focus groups and analyses of relevant complaint calls. Some common questions that program managers can ask residents include:

- How much work are you putting into the maintenance of your lawn?
- How often do you water your lawn, and how much water do you use?
- How often do you apply fertilizer and pesticides, and do you use the amount recommended on the packaging?

It is equally important to identify residents' motivators, which are values that drive community decisionmaking. For example, having a motivator of aesthetics over water savings may lead to a resident planting water-intensive plants. Determining motivators will help program managers tailor their programs around the topics their communities care about.

Using the same methods that identify knowledge gaps, program managers may ask residents to rate their levels of concern on these topics on a scale of one to five:



The landscape design for this new home combines the best of stormwater management elements: a large area of native grass that requires less water and fertilizer than a nonnative species, with a rain garden to soak up stormwater and reduce discharge.

Photo Credit: Drew Lathin for U.S. EPA WaterSense Program

- Environmental impact of the water you use
- Environmental impact of the fertilizer you use
- Environmental impact of the pesticides you use
- Drought in your community
- Climate change impacts on your community

Finally, it will help to understand the barriers that residents are experiencing to adopting better lawn care practices. Barriers may include the cost of sustainable lawn care practices, arid climates that cause a large amount of stormwater discharge instead of infiltration, or another unforeseen barrier.

If surveys are difficult to interpret, municipalities may enlist the help of local universities to provide direction.

Choose Program Topics

Determining community members' knowledge gaps, motivators and barriers can help a municipality determine the focus of its program. It may be best for a municipality to focus on one program topic at a time,

based on what provides the greatest impact at a particular time. Potential topics may include:

- Water
- Fertilizers
- Pest control
- Alternative landscaping techniques

Water

Outdoor water use is a common problem in regions where watering lawns during the summer months stresses existing water supplies. Additionally, many municipalities, not just those experiencing water stress, may benefit from addressing watering frequency and intensity in their education programs. In a study by the National Association of Landscape Professionals, roughly 32 percent of respondents admitted to not being sure how often they should water a lawn (National Association of Landscape Professionals, Inc., 2016). Therefore, it is important for a municipality to share local information with community members related to when and how much to water their lawns. EPA's [WaterSense Outdoors](#) webpage is a comprehensive resource for information on proper water usage.

Fertilizers

Stormwater discharge that contains fertilizer pollutes waterways with nitrogen and phosphorous that may encourage algae growth. Excessive algae growth may lead to dead zones, which are oxygen-deprived zones where fish and other natural ecosystems cannot survive. Municipalities that have issues with water quality and/or algae blooms should inform their communities about proper fertilizer types and usage. Appropriate fertilizer timing is specific to each region and vegetation type; therefore, municipalities may want to develop their own resources. Examples of fertilizer tips include the following: use no more than the amount that the fertilizer manufacturer recommends, apply fertilizer close to the root of the plant, don't apply fertilizer close to waterways, don't overwater lawns that have fertilizer, and try to use certain nutrient-efficient fertilizers.

Pest Control

Ingredients in pesticides can be toxic to both humans and aquatic organisms. Municipalities that have issues with pests but find large amounts of pollutants in their waterbodies can work to educate their communities on proper pesticide usage by covering proper frequency of application, volume of application and selection of products that use ingredients that are less harmful to the environment than others. Municipalities can encourage

community integrated pest management approaches. Integrated pest management approaches are decisionmaking processes that can manage pest damage to homes and gardens by the most economical means with the least possible hazard to people, property and the environment (IPM Institute of North America, 2021). Practices include techniques in soil preparation, planting, monitoring, pest trapping and others that aim to effectively control pests while reducing pesticide usage. EPA's [Introduction to Integrated Pest Management](#) webpage provides more information on principles and benefits of integrated pest management.

Alternative Landscaping Techniques

Alternative landscaping techniques involve planting and maintaining drought- and pest-resistant turf and native species to reduce the impacts of lawn care practices on watersheds. An example of alternative landscaping is naturescaping, the practice of using native plants that are more drought-, pest- and disease-resistant than nonnative species (East Multnomah Soil & Water Conservation District, n.d.).

Identify Goals

The next step in developing an education program is to determine the goals of the program. Successful programs combine a municipality's goals with their residents' goals. Goals should be specific and quantifiable in order to measure success. Goals may include a certain reduction in pollutant loads; a reduction in water usage; and/or an increase in the sales of nutrient-efficient pesticides, fertilizers, and alternative landscaping plants. By monitoring these goals, municipalities demonstrate the program's accomplishments and keep themselves accountable for the program's timely success.

Determine Program Approach

Once a municipality has determined the program topics and goals, the next step is to develop an implementation plan. Education programs may involve many elements, such as online resources and expert connections, professional training, communitywide programs, media campaigns, laws and ordinances, or a combination of these.

Online Resources and Expert Connections

A good starting point for any education program is establishing a website or directory of information relevant to the community's lawn care knowledge gaps. These resources can vary in detail from exhaustive

guides for starting a garden to a simple reminder about what time of year to fertilize certain plants.

If the municipality does not have the expertise, time or budget to construct resources of its own, it can always collect relevant resources and consult experts to help residents. State and county extension services, which are departments in local counties and universities that provide expertise in crops and landscaping services, can be resources. Extension services have accumulated an abundance of specific, practical and locally based information. The [U.S. Department of Agriculture website](#) lists state land grant universities with extension services.

Professional Training

Professionals in lawn care, such as garden center employees and lawn care companies, can be other reliable sources of information for residents. Employees trained in the use of lawn care products can advise consumers at the point of sale on proper application techniques, and lawn care services can recommend certain techniques to their customers.

Community Programs

Community programs are opportunities to educate the public through public involvement. Municipalities that are seeking to further engage the public or provide a deeper understanding of topics may implement programs such as community gardening events, educational workshops and the creation of demonstration sites in neighborhoods such as community gardens that promote good lawn care practices. Municipalities may also share information with local gardening clubs. These community programs may provide an additional benefit of uniting the community via social interaction. Programs may provide signs or pamphlets that direct participants to educational sites, such as online resources on a municipality website. If the municipality wants to offer further incentive, it can provide financial benefits for residents implementing environmentally beneficial practices through these programs, such as utility subsidies.

Social Marketing Campaigns

Social marketing campaigns may engage residents in more unique ways by using tools based on the community's barriers, motivators and perceived benefits (Bergeson, n.d.). Based on research into public attitudes, social marketing campaigns target specific audiences with effective messaging to encourage behavior change. Social marketing campaigns can

involve pictures, logos and other general branding methods that are visually appealing, memorable and tailored to the motivators of the target audience. Once developed these can be delivered via several methods: ads in papers and on television, social media platforms, pamphlets available at town hall meetings and other municipality events, emails, and in other correspondence with residents.

An example of a successful social marketing campaign is a program in Seattle that performed market research about how to appeal to a certain audience. After its research, it developed ads of a humorous salmon mascot to encourage residents to practice grasscycling (the practice of leaving grass clippings on a lawn after it has been cut), to avoid using lawn chemical products and to reduce the amount of water used on lawns. The campaign chose the salmon mascot to emphasize the impact improper lawn care can have on aquatic ecosystems that are relevant to the people of Seattle. The city stated that the campaign influenced hundreds of thousands of residents to change their lawn care habits (Kassirer, 2004).

Laws and Ordinances

Municipalities that struggle to encourage residents to use certain landscaping techniques may opt to implement laws and ordinances. A study found that suburban property owners demonstrated a high awareness of municipal lawn ordinances (Sisser et al., 2016). Ordinances may provide the legal distinction that will legitimize messages to residents. Many municipalities fine violators at increasing rates for each repeated violation.

Evaluate the Effectiveness of the Program

After implementing the program for a certain period of time, municipalities can determine the effectiveness of their programs using the metrics they previously identified to measure the success of their goals (e.g., pollutant load, water usage, pesticide and/or fertilizer sales). Additionally, municipalities can survey their residents again in order to align municipality goals with those of residents (Southwest Florida Water Management District, n.d.). Program evaluations can lead to making adjustments that can support effective results for residents' lawns as well as local water quality goals.

Additional Resources

- Minnesota's Phosphorous Lawn Fertilizer Law regulates phosphorous fertilizer use on lawns and turf.
- The University of Maryland Extension website on lawn fertilization provides information and advice on fertilizer application.
- The Jersey-Friendly Yards program offers online resources for individuals, conferences and webinars
- with professional speakers who discuss lawn care topics.
- The University of New Hampshire Extension library of fact sheets offers resources on lawn care, landscaping, general gardening and other topics for garden centers and their customers.
- Washington D.C.'s RiverSmart program offers free yard audits and financial help with installing a variety of stormwater-friendly features.

Additional Information

Additional information on related practices and the Phase II MS4 program can be found at EPA's National Menu of Best Management Practices (BMPs) for Stormwater website

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Disclaimer

This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.