

Be Air Aware - Saving Water Saves Energy and Reduces Emissions

Ground-level ozone is formed by a series of chemical reactions between nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the presence of sunlight. The NO_x and VOC that contribute to the formation of ozone are commonly generated from operating vehicle engines, electric generation units, industrial facilities, and many everyday activities, including nursery and landscaping operations. Impacts from ozone pollution on human health are of specific concern. Nursery and Landscape business managers should consider ways to limit the emissions from their business operation that lead to ozone formation.

Look into making adjustments to business watering operations. Water used by nursery centers and landscapers impacts the volume of water used by a community over the course of a day. The water use requires energy to move through the water system to the final destination. Air emissions are generated as energy is used to treat and transport water and the emissions produced can impact air quality.

According to the U.S. EPA there are five stages where energy is used in the water cycle:

1. **Extracting and conveying water:** Extracting water from rivers and streams or pumping it from aquifers, and then conveying it over hills and into storage facilities is a highly energy intensive process.
2. **Treating water:** Water treatment facilities use energy to pump and process water.
3. **Distributing water:** Energy is needed to transport water.
4. **Using water:** End users consume energy to treat water with softeners or filters, to circulate and pressurize water with circulation pumps and irrigation systems, and to heat and cool water.
5. **Collecting and treating wastewater:** Energy is used to pump wastewater to the treatment plant, and to aerate and filter it at the plant.

Take action by designing and implementing a water efficiency plan for your business that defines specific actions the business will take to survey water usage. The water efficiency plan should include:

- A training program for employees which gives the employees an understanding of how to use water efficiently.
- A schedule that ensures inspections for leaks are regularly conducted. This will help you make sure that all leaks are identified timely and repairs or retrofits are completed. According to the U.S. Department of Energy, a leak of one drip per second can cost \$1 per month.
- Survey and install, where necessary, faucet aerators, low-flow shower heads (where applicable), and low-flow (or waterless) toilets and urinals.
- Use more drought-resistant plants at nursery and landscaping operations to help reduce water use.
- Provide xeriscaping as an option to interested clients.

When your business uses less water air quality can be improved.

For more information about the water and energy connection visit this U.S. EPA region 9 website:

<http://www.epa.gov/region9/waterinfrastructure/waterenergy.html>

For more information about ground-level ozone visit the following websites:

U.S. EPA: <http://www.epa.gov/groundlevelozone/>

Texas Commission on Environmental Quality:

<http://www.tceq.texas.gov/airquality/monops/ozonefacts.html>