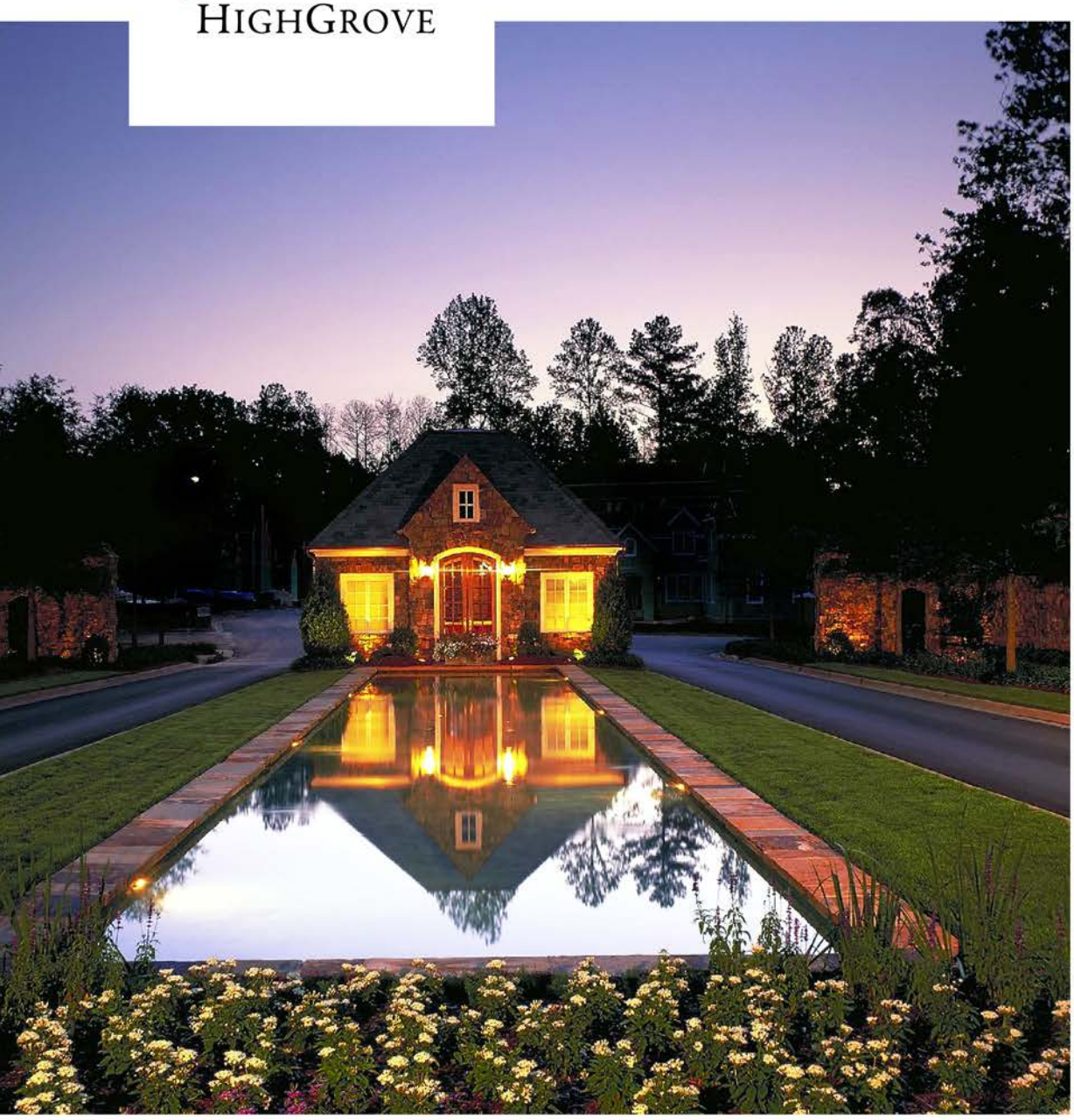
The Complete Guide to

WATER MANAGEMENT FOR YOUR ATLANTA COMMERCIAL PROPERTY

HIGHGROVE



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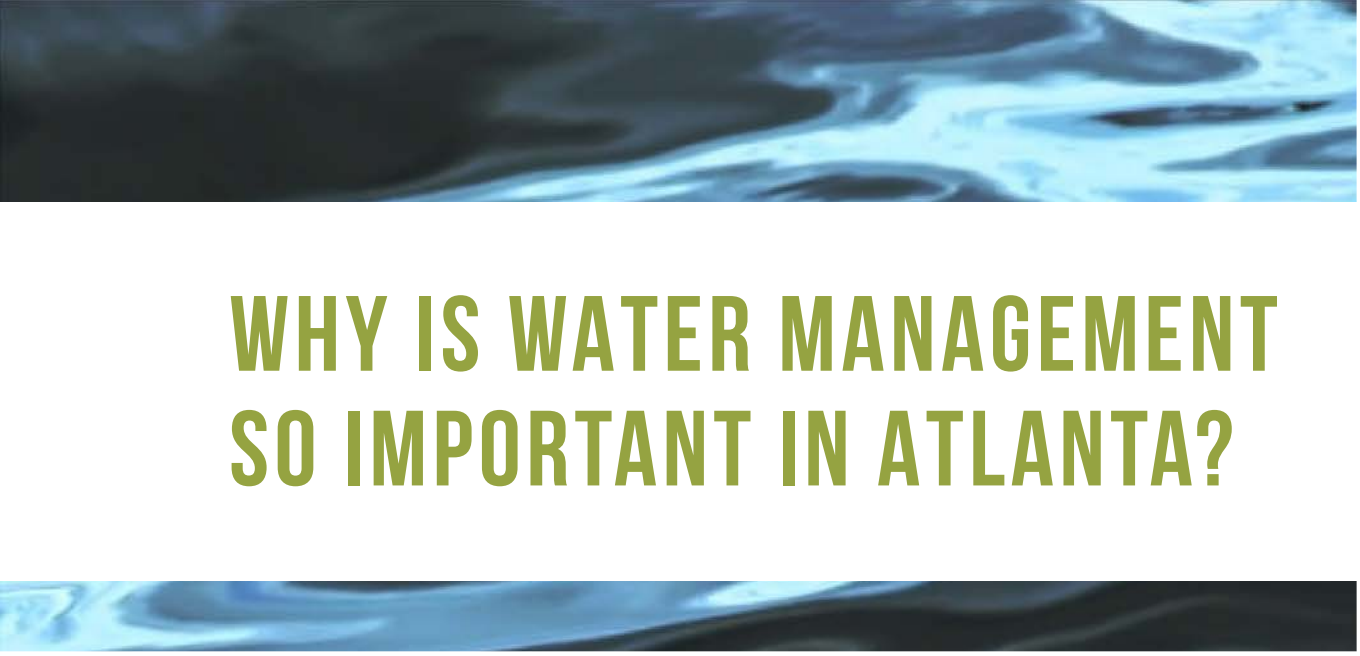


WHY IS WATER MANAGEMENT SO IMPORTANT IN ATLANTA?

Turning on the tap provides us with easy access to water every day, whenever we need it and in whatever quantity we need it. This is true for all of us — at home when we take a shower, brush our teeth and make coffee, and at work as part of our jobs maintaining Atlanta commercial landscapes and facilities. Water also plays a big role in our local communities, keeping businesses and industries thriving.

Between 2000 and 2010, Georgia was the seventh fastest-growing state in the United States, with a population boost of more than 18 percent — and the state could reach 14.4 million residents by 2030, according to the U.S. Environmental Protection Agency. Half of those residents live in the ever-growing Atlanta area, and all of them need water.

The area, also known as "Hot-lanta" for our characteristic hot and humid summers, has a small surface water supply relative to its size. As a result of this supply and demand imbalance, Atlanta is disproportionately affected by water shortages, a condition that's only expected to continue to worsen as the city keeps growing.

Despite Georgia's humid climate and a statewide annual rainfall of 50 inches, periodic water shortages have become a fact of life for the state's residents. 2013 brought some of the wettest months the area has seen since 2005, but we're no stranger to severe drought.

These peaks and valleys in water availability remind local commercial property managers they must properly manage their water use to aid in conservation, to save money and to present their businesses as sustainable parts of the community. While much work can be done inside with water savings, a great deal can also be done outdoors with landscape irrigation and stormwater management to conserve water.

WHY PROPERTIES ARE GETTING SMARTER ABOUT WATER MANAGEMENT

Reducing water use is a top priority for leading commercial operations for many reasons: dwindling resources, rising water rates and regulatory mandates are just a few.

The squeeze on water supplies from drought and growing competition for water is also driving a move toward increased water use efficiency, in part through smart technologies. Sustainable water stewardship requires innovation through water reuse and recycling, as well as smarter ways of using water. Smart water management programs can help commercial properties operate at peak efficiency at all times.

And because water prices rise every year, a trend not expected to slow anytime soon, getting a handle on some of the latest strategies available is crucial for Atlanta commercial property managers today.

The application of smart technology is already transforming the landscape industry. Smart water use can reduce operating costs by reducing leakage, energy use and system maintenance costs.

PRESERVING A PRECIOUS RESOURCE

Water is one of Earth's most precious resources, and it's essential for so many purposes in our lives — including keeping commercial properties' plants and landscape materials healthy and beautiful.

Supplementing rain when necessary to water landscape plants keeps them growing and doing their jobs in preventing soil erosion and providing us with shade, temperature control, stormwater management, carbon sequestration and oxygen production.

According to the Drought: U.S. Geological Survey Water Fact Sheet says Georgia averages 50 inches of rainfall annually, which is more than enough to meet the requirements of most plants. The rain, however, doesn't always fall in sufficient quantities during the time of year when plants need it most. This is where supplemental water in the form of irrigation is helpful.

About 30 percent of the water used daily in the United States is used outdoors, according to the U.S. Geological Survey.

That's why, when using irrigation for landscape purposes, it makes the most sense to use irrigation practices that will maximize water use by directing the right amount of water to where it's needed most (plant roots) — and to take advantage of the latest technology to ensure water isn't wasted in the process, through runoff or evaporation.

Let's take a look at a few areas where Atlanta commercial property managers can maximize water use and be more efficient with water on their properties.

STORMWATER MANAGEMENT

Managing stormwater is a necessary part of water management in the Atlanta metropolitan area. This is particularly important during storms to prevent flooding, erosion and runoff. The science and art of stormwater management has come a long way in the last several years. Most of this has been driven by the need to improve water quality in streams, lakes and oceans. Many municipalities in Georgia require commercial developments to have stormwater management plans. And they are also stepping up code enforcement of these areas, partly to raise additional fees during the down economy.

Here are a few methods HighGrove Partners uses to manage stormwater on Atlanta commercial properties.

RETENTION PONDS

A retention pond is designed to hold a permanent pool of water that fluctuate in response to precipitation and runoff. Usually, retention ponds are designed to have drainage leading to another location when water levels go beyond a certain point. However, they continue to maintain a certain water capacity. Maintaining a water pool helps keep deposited sediments at the bottom of the holding area, improving water quality.

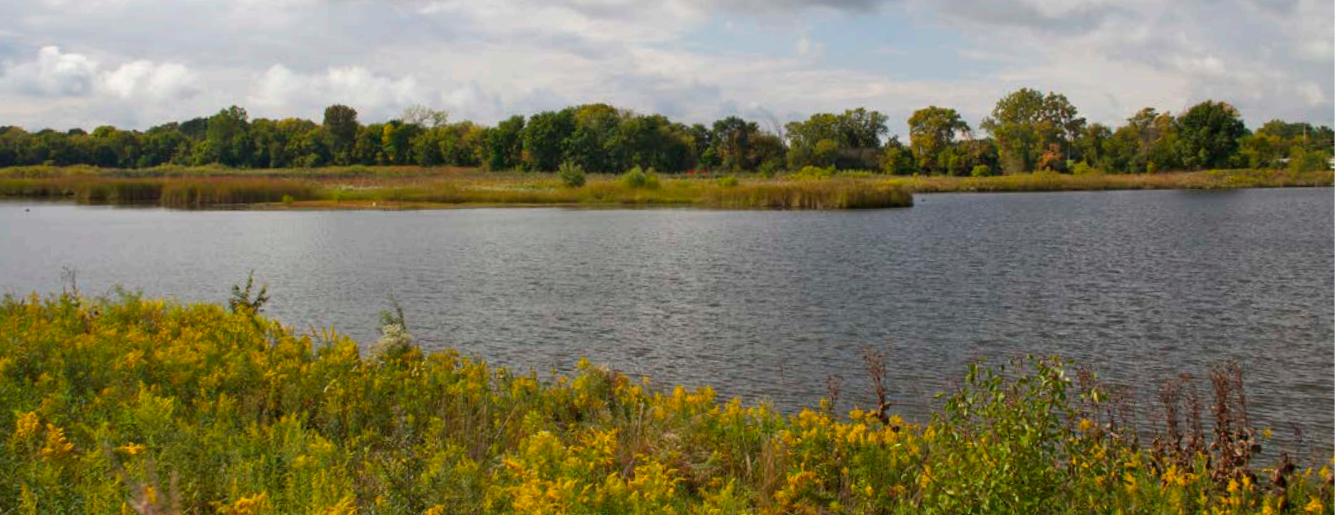
DETENTION PONDS

A detention pond — or dry pond — is an area where excess stormwater is stored or held temporarily and then slowly drains when water levels in the receiving channel recede. Detention ponds are used extensively in the Atlanta metropolitan area.

Detention ponds come in handy during large storm events, which can contribute a significant volume of runoff moving at an increased speed, raising the potential for erosion and flooding, particularly downstream. When the rain stops, detention ponds empty shortly afterward.

In order to operate successfully, both detention ponds and retention ponds require regular maintenance. Inspections, debris removal, vegetation management, bank stabilization and structural checks are all important to ensure detention and retention ponds are ready to do their jobs when storms or heavy rains occur.

This maintenance is also required to avoid hefty government fines.



BIOSWALES

Another way to manage stormwater is through the use of a bioswale. A bioswale is a conventional ditch or swale, modified and planted with appropriate native plants. These plants help increase water percolation and pollutant removal as stormwater flows through them.

A bioswale can provide an aesthetically pleasing addition to an Atlanta commercial property — much nicer to look at than a bare ditch or large puddle — and can also be sustainable and environmentally friendly.

RAINWATER HARVESTING SYSTEMS

Capturing rainwater from building roofs, surface run-off and HVAC condensation are excellent ways to use water wisely by putting the collected water to good use. This is typically done through water-harvesting systems such as cisterns.

DRAINAGE

Commercial property managers often underestimate the critical importance of drainage in their landscapes. Poor water flow can erode soil, threaten plant material and cause damage to building foundations. Where land is flat, soils are dense with clay or water tables are high, a well-designed drainage system is top priority.

Here are some of the drainage solutions HighGrove Partners uses on Atlanta commercial properties.

FRENCH DRAINS

These slightly sloped, underground trenches filled with gravel and pipes divert water away from commercial buildings, soggy lawn areas, hardscape areas and other areas where water collects.

The goal of a French drain is always to move water away from excessively wet areas.

TRENCH DRAINS

Trench drains are used when two areas meet and cause water to flow where it shouldn't. Some examples are two hardscape areas or hardscape and landscape areas or building thresholds and hardscapes.

With trench drains, we use slopes and concrete and metal grates to reflow surface water in the proper direction.

PERMEABLE PAVERS

Pavers can add form and function to any Atlanta commercial property. They are low-maintenance, durable and add a lot of value and aesthetic appeal. They can be used in many construction applications, including parking lots, streets, sidewalks, driveways, trails, plazas and walkways.

Permeable pavers actually filter and drain stormwater runoff to underlying soil or underground drainage systems, improving water quality while managing stormwater. By storing water and releasing it at a slower rate, permeable pavers also reduce the urban "heat island" effect.

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IRRIGATION

Irrigation systems are a supplement to rain, and in that way they don't overwater commercial landscapes, wasting water and money. The trick is to provide just enough water, and not too much. This is particularly true in Atlanta, where water availability can be an issue as a result of drought.

As plants grow and mature, their water needs change. Plants that were once in full sun may be shaded and require less water later in their life cycle, for instance. In fact, an entire commercial landscape's water needs can change from year to year, and how the irrigation system waters the property must adapt to those changes.

HighGrove analyzes current water consumption on our clients' properties and evaluates irrigation system coverage and pressure. This analysis can help us determine what solutions are right in order to ensure the greatest water efficiency on an Atlanta commercial property—maintaining property managers' budgets while making their facilities more sustainable.

SMART IRRIGATION

When HighGrove Partners crews install or renovate an irrigation system, we use many of these smarter irrigation components:

Drip irrigation: Drip irrigation efficiently applies a low volume of water directly around the root zone of the plant, targeting water and minimizing water loss.

Pressure-regulated spray heads and rotors: Proper pressure boosts water use efficiency by eliminating evaporation and unnecessary watering. As a bonus, pressure-regulated spray heads and rotors also reduce leakage and increase system life.

Rain sensors: No one wants to see an irrigation system running in the rain. Rain sensors eliminate unnecessary watering by turning off the irrigation system during and shortly after precipitation.

Soil moisture sensors: Similar to rain sensors, soil moisture sensors ensure irrigation systems don't run when soil moisture indicates water isn't necessary.

Advanced head nozzles: Nozzles are the smallest part of an irrigation spray head, but they're among the most important parts because they help provide a more efficient pattern of water and spray angle.

MP rotators: MP rotators transform spray heads into multistream rotors that reduce the amount of water flowing through the spray heads by providing more efficient water delivery.

Advanced controllers: If irrigation systems had brains, these would be it. They measure precipitation, humidity, wind, solar radiation and other factors to determine evaporation levels and water accordingly.

GREYWATER USE

There are many types of greywater systems for landscape irrigation use. Greywater is wastewater that does not contain serious contaminants. A greywater system must be carefully designed and planned, determining how much greywater is produced daily, the property's water demands, how much storage is necessary to meet these demands and how the water will be distributed.

All greywater systems involve some type of filtration to remove any particulates before the water circulates through the system. Disinfection of the greywater is also common to minimize risks should animals or humans come in contact with it. Then, correctly filtered and disinfected greywater can be applied through relatively normal irrigation systems.

Any greywater irrigation system design should have easy accessibility for performing regular inspections and maintenance. All greywater systems must be identified with a label or signage.

Want help designing your irrigation system? Get in touch with HighGrove.

KNOWWATER: HIGHGROVE'S COMPLETE WATER MANAGEMENT SOLUTION

As you can see, there are many ways to manage water on an Atlanta commercial property. At HighGrove Partners, we call our comprehensive, customizable water management program KnowWater.

That's because we understand all of the options and know which ones make the most sense in specific situations. We know water, and we can help you make better use of it on your property.

Through our specialized, targeted program, we design solutions that maximize water efficiency, saving up to 40 percent of water costs on a commercial property.

As a result, any investment made in improving stormwater management, drainage and landscape irrigation on your commercial property can quickly pay for itself in water cost savings.

KnowWater™
HIGHGROVE

Want to learn more about our KnowWater program and how we can help you manage the water on your commercial property? Give us a call at 678-298-0550.