

A vertical, close-up photograph of a green leaf, showing its veins and texture. It is positioned on the left side of the page.

Part Two: LEED v4 BD+C Outdoor Water Reduction and Related Credits

The **Leadership in Energy and Environmental Design (LEED)** green building rating system offers credits for reduction of outdoor water use. The credit prerequisites and requirements vary based on building and project type.

In this article we will explain the prerequisites and credit options for the Outdoor Water Use Reduction in the Water Efficiency credit category for Building Design + Construction (BD+C) project types. There are also related credits for integrative process, cooling tower water use and water metering that may help project teams meet the Outdoor Water Use Reduction credit and increase the total number of credits.

LEED v4 Integrative Process—New Credit Category’s Impact on Water-Related Systems

A new credit category for LEED v4 is the Integrative Process credit. This credit requires an examination of the project’s or the building’s energy and water-related systems early in the design process. Specifically, it is defined as an “early analysis of interrelationships for high-performance, cost-effective project outcomes.”

Requirements:

- Identify opportunities to synergize across all disciplines from predesign phase through design phase.

Project teams should perform a preliminary water budget that includes the landscape irrigation water demand volume to assess the project’s potential nonpotable water supply sources. The landscape’s water demand volume should be calculated using the Environmental Protection Agency’s (EPA) WaterSense Water Budget Tool, which is the reference calculator for LEED: http://www.epa.gov/watersense/water_budget/.

This analysis can lead to the use of alternate sources of water for irrigation, thus helping to reduce the amount of potable water needed. One example of this process is to look for opportunities to utilize cooling tower water for irrigation.

Projects can earn one point for the Integrative Process credit.

LEED v4 Water Efficiency Credit Category for BD+C Project Type

The BD+C Water Efficiency credit category consists of three prerequisites and four areas where project teams can earn up to 11 credits. The BD+C project type covers a wide range of building types. A complete list can be found [here](#).





The water efficiency credit category has been expanded in scope since LEED 2009 to include utilizing the building's process water for irrigation.

Water Efficiency Credits for BD+C Project Types

Prerequisite 1	Outdoor Water Use Reduction	Required
Prerequisite 2	Indoor Water Use Reduction	Required
Prerequisite 3	Building Level Water Metering	Required
Credit 1	Outdoor Water Use Reduction	Up to 2 points
Credit 2	Indoor Water Use Reduction	Up to 6 points
Credit 3	Cooling Tower Water Use	Up to 2 points
Credit 4	Water Metering	1 point

Outdoor Water Use Reduction Prerequisite

The intent of the prerequisite is to reduce outdoor water consumption by either:

- **Option 1:** No irrigation required after the two-year establishment period, or
- **Option 2:** Reduce irrigation by at least 30% from the calculated baseline for the site's peak watering month.
 - This reduction must be achieved through plant species selection and irrigation system efficiency.

This prerequisite applies to all BD+C projects with outdoor vegetated space of over 1000 sq. ft. The irrigation system efficiency is calculated using the [WaterSense Water Budget Tool](#).

Required Documentation

The required documentation varies based on the option chosen for the project.

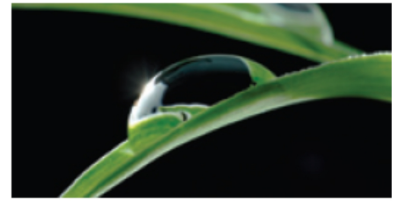
Option 1: No irrigation is required after two-year establishment period.

- Site plan showing vegetated area
- Narrative for plant species and water requirements

Option 2: Reduce irrigation by at least 30% from the calculated baseline for the site's peak watering month.

- Site plan showing location and size of landscape zones
- Water budget tool report





Building Level Water Metering Prerequisite

This prerequisite requires permanent whole-building water metering. This information will be shared with U. S. Green Building Council (USGBC) to accurately record the building's water usage. Sub metering landscape irrigation is recommended to gain an accurate recording of irrigation water usage and the reduction needed to earn the credits.

Credits for Outdoor Water Use Reduction BD+C Projects

Projects can earn up to two points.

Credit 1: Outdoor Water Use Reduction (up to 2 points)

Option 1: No irrigation required over the maximum two-year establishment period (2 points)

Option 2: Reducing irrigation by 50% earns 1 point; reducing irrigation by 100% earns 2 points

Required Documentation

Option 2: Alternative water source and control calculations are required.

Alternate water sources include the following: Reclaimed wastewater, graywater, ventilation system condensate, and captured rainwater and storm water

Related Credits and the Impact on Outdoor Water Efficiency

The related credits for indoor water use reduction, cooling tower water use, and water metering all contribute to helping achieve the credits for Outdoor Water Use Reduction.

For instance, using captured graywater can help reduce outdoor water use and the building's cooling tower water can also be used. It is important to test the water for appropriateness for irrigation, as some alternate water sources have high salt and mineral content that can adversely affect soil and plants. Alternative water storage for irrigation should be planned for use during the design phase.

Projects can use the alternate sources of water for multiple Water Efficiency credits, such as Indoor and Outdoor Water Use Reduction credits, but only if there is sufficient volume to cover the demand for all the uses (e.g., irrigation plus toilet-flushing demand).

