Comparing Water Rating Programs: NGBS WRI Score vs. RESNET HERSH_2O

Home Innovation
NGBS GREEN CERTIFIED™

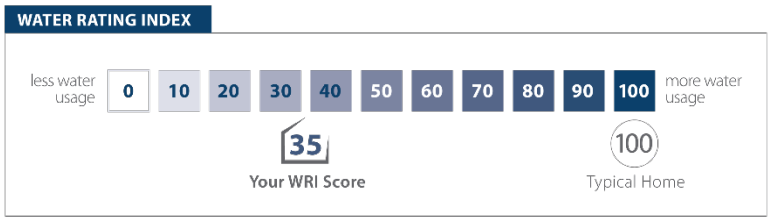
Overview

In today's market, there is an increasing focus on residential water use. Many parts of the country are affected by rising utility costs and water hook-up fees for builders. In some areas, there are limitations on new construction or restrictions on annual water use due to water shortages.

A credible third-party water rating equips a builder to showcase the efficient design and construction of their homes and discuss how it compares to traditional construction. A water rating is a score of a whole-property's water uses, inclusive of both indoor and outdoor uses. Like energy ratings, most water ratings are between 0 to 100, with lower values representing more efficient water use. With whole-home water ratings, a builder or developer can more easily communicate about overall water use with their local officials and prospective home buyers. Local officials gain a better understanding of a home's impact on the public water system. Prospective home buyers gain a better understanding of a home's total cost of ownership and straight-forward metric that they can use to compare one property to another.

Home Innovation Research Labs and the Residential Energy Service Network (RESNET) offer nationally-available water rating programs. Both NGBS WRI and HERSH_2O are credible options for residential builders to demonstrate water efficiency, but there are significant differences in scope and cost and minor differences in the system methodologies.

The NGBS WRI offers an affordable and streamlined water efficiency recognition for new single-family homes and multifamily buildings. The WRI methodology is straightforward and accounts for performance-based design and innovative features that contribute toward water savings.



Scope & Costs

Both the NGBS WRI and HERSH_2O are ANSI-approved consensus standards. The 2020 National Green Building Standard (NGBS) includes the Water Rating Index (WRI) methodology, a performance-based water rating for new single-family homes and multifamily buildings. The RESNET/ICC Standard 850-2020 standard provides the underlying calculations for RESNET's HERSH_2O rating.

Both programs address single-family homes, but only the NGBS WRI is available for multifamily buildings.

The NGBS WRI is only available for new construction. HERSH_2O is available for both new and existing buildings.

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The NGBS WRI is included within a broader green building standard that addresses lot design and construction, resource efficiency, energy efficiency, indoor air quality, and operations and maintenance. Home Innovation offers a streamlined process for builders to achieve NGBS Green certification with a certified WRI score, offering builders a robust third-party green certification and a metric that they can use to communicate expected water use and distinguish their homes from the competition.

HERSH_2O is a stand-alone offering but is designed to be pursued in conjunction with RESNET's HERS rating. With HERS and HERSH_2O, a builder can showcase the energy and water efficiency of their rated homes.

Both Home Innovation and RESNET are recognized by EPA as approved WaterSense Labeled Homes Home Certifying Organizations (HCOs). This means that builders can easily combine a certified WRI score or a HERSH_2O rating with the WaterSense label for added marketing value.

For single-family homes, the NGBS WRI is much more affordable than HERSH_2O, especially when pursued in conjunction with green certification.

Indoor Water Use

The NGBS WRI and HERSH_2O are similar but distinct in their indoor water use calculations.

Both NGBS WRI and HERSH_2O calculate overall indoor water use. NGBS WRI does this on an annual basis; HERSH_2O calculates a daily demand.

Both systems assess the expected water use from water-using fixtures and appliances.

For NGBS WRI requires testing of structural waste water—the water volume in the pipe between the hot water source and plumbing fixtures or appliance, plus the extra volume needed to heat the pipe as hot water is delivered to its use.

HERSH_2O assesses static water pressure—the pressure on the water supply piping when no plumbing fixtures are running—through an on-site test in cases where no pressure-reducing value or pressure tank is present.

Outdoor Water Use

Both the NGBS WRI and HERSH_2O calculate overall outdoor water use.

Compared to HERSH_2O, the NGBS WRI includes more straightforward and customizable equations for assessing outdoor water use.

The HERSH_2O system does not address the impact that plant selection and irrigation system efficiency can have on outdoor water demand.

Water Capture

With the NGBS WRI, a builder can apply captured rainwater, greywater, and blackwater to offset indoor and outdoor water demands. RESNET HERSH_2O does not address water capture and reuse.

Compared to HERSH_2O, the NGBS WRI offers more opportunities for efficient homes to be recognized for their innovative systems.

COMPARISON: NGBS Water Rating Index (WRI) vs. HERSH$_2$O		
	NGBS WRI	**HERSH$_2$O**
SCOPE		
ANSI Standard	Y	Y
Available for Single-Family	Y	Y
Available for Multifamily	Y, a single score for entire building	N
New Construction	Y	Y
Renovation	N	N
WaterSense Add-On Available	Y	Y
Onsite Inspection Required	Y	Y
Cost	Pursued with NGBS Green Certification: $0 Pursued Independently (anticipated mid-2022): $50 per home, $100 per multifamily building	Varies by RESNET Provider, estimated $50-150/home
Overall Evaluation	Projected Annual Water Use / Annual Baseline	Projected Daily Water Use / Reference Home Daily Use
INDOOR WATER USE		
Indoor Calculation	Projected Annual Water Use from Indoor Fixtures and Appliances Based on Estimated Number of Residents (# of Bedrooms + 1)	Projected Daily Water Use Calculated Based on Number of Bedrooms
Flush & Flow Rates	Y	Y
Appliances - Dishwasher, Washing Machine	Y	Y
Structural Waste	Y	N
Static Pressure Adjustment	N	Y
OUTDOOR WATER USE		
Outdoor Calculation	Water Demand Calculated Based on Square Footage, Landscape Material, and Irrigation Type	Water Demand Calculated Based on Lot Size and Presence of Outdoor Irrigation
Landscape Design	Y	Y
Irrigation System	Y	Y
Other Considerations	Pools, Spas, Fountains	Pools
WATER CAPTURE		
Rainwater Capture	Y	N
Greywater Capture	Y	N
Blackwater Capture	Y	N
Water Reuse	Y	N