

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com





Building a Water-Efficient Future

WaterSense Labeled New Homes

Alicia Marrs, WaterSense Program
U.S. Environmental Protection Agency



Panelists



- Kathy Nguyen, Cobb County Water System
- Jacob Attala, KB Home
- Frank Kinder, Colorado Springs Utilities
- Anne Hill, Portland Water Bureau



What Is WaterSense?

- Voluntary partnership and labeling program sponsored by the U.S. EPA
- Promotes simple changes at home to help save water for future generations
- Simple way for consumers to identify products, new homes, and services that use less water **and** perform well



WaterSense: Power in Partnerships



- **Manufacturers** design and create products to meet specs
- **Certification bodies** test and label products
- **Retailers/Distributors** get products on shelves
- **Builders** construct water-efficient homes using products
- **Certification providers** inspect and label homes
- **Irrigation partners** help homeowners water more efficiently
- **Promotional partners** spread the word
 - Water utilities, state, local and tribal governments, nonprofit organizations, and home builder associations



WaterSense Labeled New Homes



WaterSense labeled new home under EPA pilot
Chapel Hill, NC

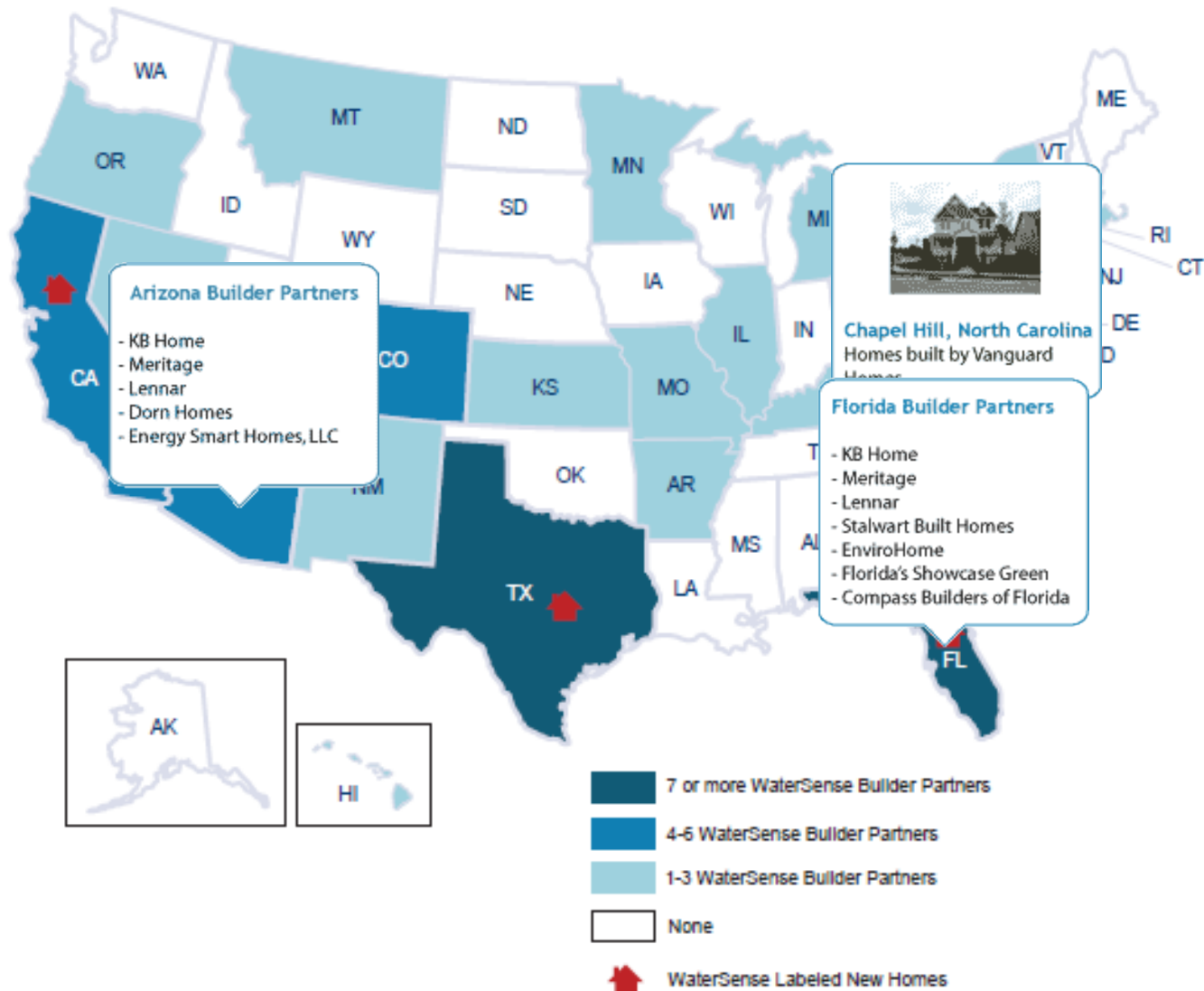
- First national new home labeling program for water efficiency
- 52 builders nation wide
 - Homes labeled in 10 states (unofficially) & more coming on-line
- WaterSense labeled new homes will:
 - Reduce water use in new homes by 20%
 - Educate homeowners about continuing water-efficient behaviors
 - Encourage community infrastructure savings

WaterSense Complements Other Green Programs



- **One-stop inspection for multiple programs**
 - WaterSense certification process for new homes is similar to ENERGY STAR®
 - Home energy raters and/or LEED providers can conduct water-efficiency home inspections
 - One-stop inspection saves builders time & \$
 - Integrated as a whole house water efficiency credit in LEED for homes 2012 (currently a “pilot credit”)
 - Harmonizing Water Budget methodology with LEED and Sustainable Sites Initiative (SSI)
 - WaterSense Water Budget Tool referenced in all LEED 2012 rating systems

Where do WaterSense Partners Build?



New Homes Specification: Indoors



- **Required items:**
 - Water service pressure maximum 60 psi
 - Leak prevention measures
 - WaterSense labeled plumbing fixtures
 - Other water-efficient plumbing fixtures
 - Efficient hot water distribution system
- **Optional items must meet efficiency criteria, if installed:**
 - ENERGY STAR qualified dishwasher or clothes washer (if appliances installed)
 - Evaporative air conditioners
 - Water softeners
 - Drinking water treatment systems



New Homes Specification: Outdoor



Front yard + improved-upon areas

- Landscape - 2 Options
 - Water budget *or* 40% turfgrass allocation
 - Vegetated slopes
 - Mulching requirements
- Other water features *(if installed)*
 - Pools/spas - require covers
 - Ornamental water features
- Irrigation system *(if installed)*
 - Design
 - Audit
 - Scheduling



Healthy, beautiful
landscapes that allow the
homeowner to save water

Why Purchase a WaterSense Labeled New Home?



New!

- WaterSense labeled homes will be at least 20% more efficient than a traditional new home

- When compared to a typical home a family of four can save:
 - **50,000** gallons of water - equal to 2000 loads of laundry
 - At least \$500 per year on water, sewer, and energy bills

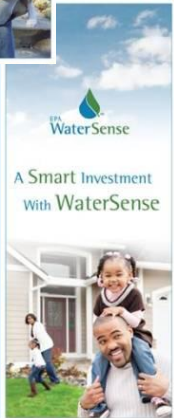
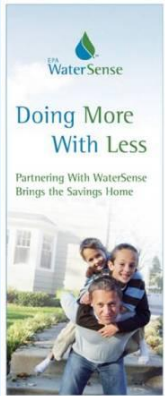
New Partner Tools



- **Builder/Provider marketing tool kits**
 - Press release templates
 - Web site language
 - Artwork templates
- **Use of partner logo**
- **Use of new promotional labels**
 - Including builder promo label
- **Online materials**
 - Text and ideas for builder Web sites
 - Programmed “widget” updated regularly with water efficiency tips from WaterSense
- **All WaterSense tools can be utilized by any type of partner (aka are available to HBAs that partner with WaterSense)**



Tools for Realtors & Inspectors



- Promotional marks
 - “look for” & “ask about”
- New Homes recruitment brochures
- WaterSense factsheets for products and homes
- New Website geared towards “selling”



Coming to a neighborhood near you!



Learn More



■ WaterSense Information

- Web site: www.epa.gov/watersense
 - Partnership information
 - new homes specification,
 - certification system, or

■ For questions:

- E-mail: watersense@epa.gov
- Toll-free Helpline: (866) WTR-SENS
 - 1(866) 987-7367
- Alicia Marrs marrs.alicia@epa.gov





EPA
WaterSense

Doing more. With less.

How Water Efficiency Fits in KB Home's Sustainability Strategy

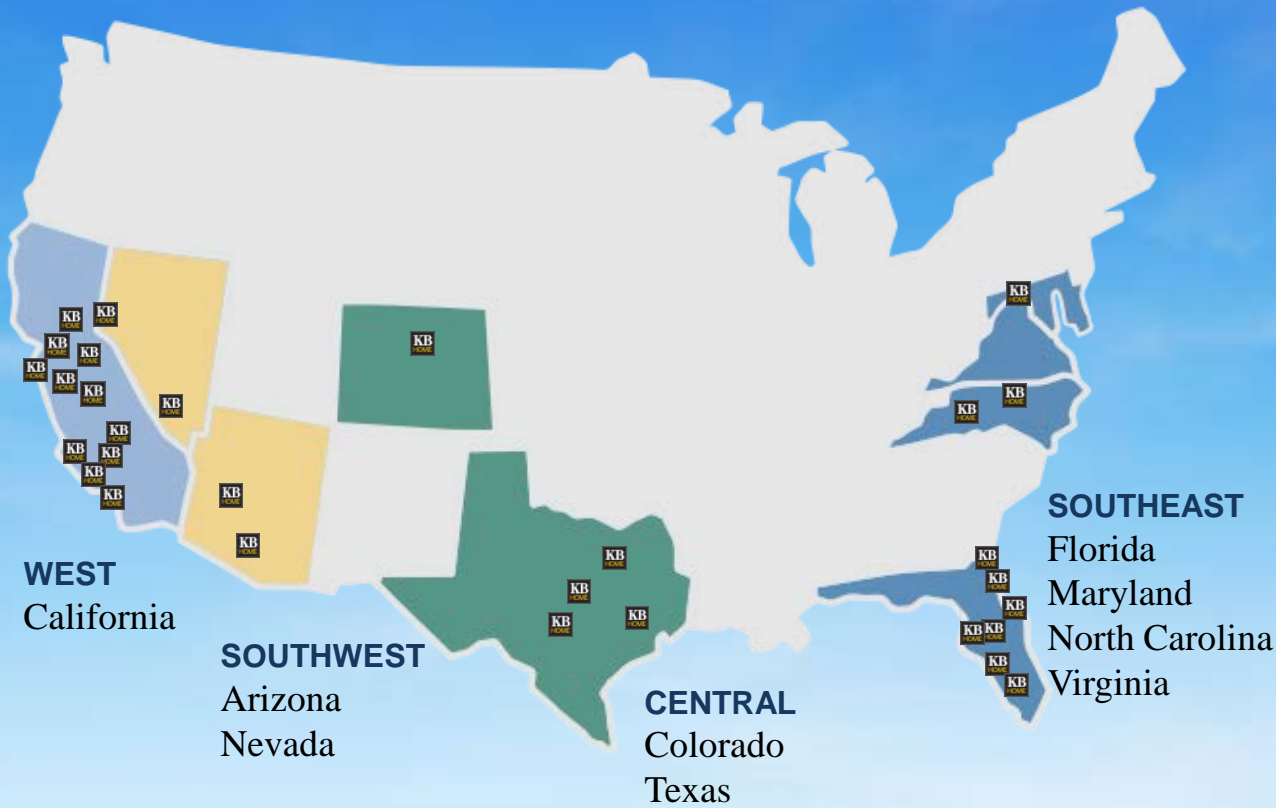


Jacob Atalla
Sr. Director, Sustainability

October 7, 2011



Overview





Overview

KB HOME BUILT TO ORDER

EPA WaterSense 2011 PARTNER OF THE YEAR

THE OPEN SERIES

MY HOME. MY EARTH.

ENERGY STAR AWARD 2011 SUSTAINED EXCELLENCE

Calvert INVESTMENTS

NAHB RESEARCH CENTER NHQ CERTIFIED

Building AMERICA U.S. Department of Energy Research Toward Zero Energy Homes

BUILDING QUALITY NEW HOMES SINCE 1957

FORTUNE WORLD'S MOST ADMIRABLE COMPANIES 2010 MOST ADMIRABLE HOMEBUILDER 6TH YEAR IN A ROW #1 IN INNOVATION

WATER CONSERVATION COALITION

Build It GREEN Smart Solutions from the Ground Up

KB HOME 10 YEAR LIMITED WARRANTY



Approach to Sustainability



Environmental Responsibility

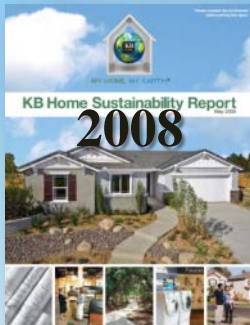
- Building environmentally friendly homes
- Minimizing our operations' impact on the environment
- Leveraging sustainability across every aspect of our business

Economic Responsibility

- Offering products that appeal to today's consumer
- Keeping homeownership affordable

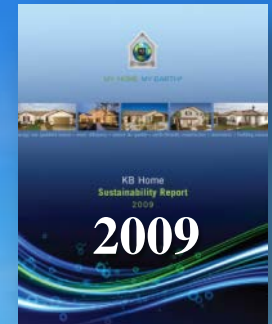
Social Responsibility

- Creating vibrant neighborhoods
- Giving back to the communities in which we live and work



Shareholder Responsibility

- Improving quality of Brand
- Creating long-term growth and value
- Reporting progress on sustainability initiatives





Energy Efficiency



ENERGY PERFORMANCE GUIDE™

Bayberry Lakes

PLAN 1538



ESTIMATED MONTHLY COSTS FOR STANDARD HOME HEATING/COOLING SYSTEMS, APPLIANCES AND LIGHTING

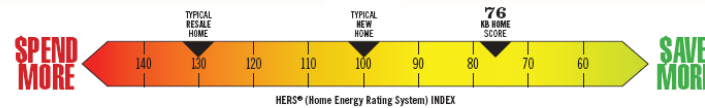
\$104

Actual energy consumption and costs will vary.

ESTIMATED MONTHLY SAVINGS VS. A TYPICAL RESALE HOME

\$63

Actual energy savings will vary.



This home includes great energy-efficient features at no additional cost.

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Water Efficiency

“When the
well is dry,
we learn the
worth of
water.”

Benjamin Franklin



MY HOME. MY EARTH.™

WATER CONSERVATION



Water Smart Homes

7,193

This is the cumulative number of Water Smart Homes built by KB Home since 2005. KB Home builds 100% of our Las Vegas homes to this standard at no additional cost to our homeowners.

"KB Home was the first major homebuilder to embrace Southern Nevada Water Authority's Water Smart Homes program and build all of their homes in the Las Vegas area to this standard, which reduces fresh water consumption by nearly 50% compared to traditional new homes. As one of the largest builders in the region, their participation has been influential in encouraging other builders to adopt the standard as well and homebuyers to look for the Water Smart Homes label when shopping for a new home. We applaud their long-term view on the importance of water scarcity as a key issue for Southern Nevada and all of its residents."

Doug Bennett
Conservation Manager
Southern Nevada Water Authority

From KB Home's
2009 Sustainability Report.

**Per SNWA estimates,
the Water Smart homes
built by KB (now
approx. 8,000) save
over 1.5 million gallons
of water per day.**





WaterSense Labeled Products

Whirlpool

Save energy and money.

- Reduce water and energy use
- Lower your utility bills

DID YOU KNOW?
ENERGY STAR qualified top load washers use 20% less water than standard top load washers. Top load washers could save up to \$1.19 a year. Whirlpool Dual Fuel load washers use 20% less water and energy than standard front load washers. Front load washers could save up to \$100 a year.

At KB Home, standard dishwashers are ENERGY STAR-qualified.

MY HOME. MY EARTH.

Whirlpool

Save energy and money:

- Reduce water and energy use
- Lower your utility bills

ENERGY STAR® kitchens.

ENERGY STAR qualified refrigerators:

- Energy efficient
- High efficiency compressors
- Improved insulation
- Precise temperature control
- Quick defrost mechanism
- Superior water/ice integrated freezer system

ENERGY STAR qualified dishwashers:

- Water cycle adapts to load size
- 40% less water usage than hand washing
- Detergent in every cycle KB Home

ENERGY EFFICIENCY

Shaw carpet. Made with Anso® nylon.

- Looks great
- Durable performance
- Environmentally friendly
- Can be recycled

Shaw

SUSTAINABLE RESOURCES

Lower energy. Brighter outlook.

ENERGY STAR qualified lighting fixtures:

- Energy efficient
- Long life span
- Available in many colors
- Available in many shapes and sizes

A Refreshing Way To Save Water

IT'S YOUR CHOICE

KB HOME and MOEN are pleased to offer you a wide selection of Eco-Performance showerheads that deliver the same level of performance you've come to expect from Moen, but use up to 50% less water and meet the Environmental Protection Agency's EPA WaterSense® labeling criteria. Who knew that saving water could feel so good?

Buy it for looks. Buy it for life.*

Kohler low-flow toilets can save water and money.

QUICK TIP:
One low-flow toilet can reduce water usage by 2,000-3,000 gallons a year. Three low-flow toilets can reduce water usage equal to the amount needed to fill a swimming pool.


THE BOLD LOOK OF KOHLER





WaterSense Labeled Products

About Us | Products | Outdoor | New Homes | Commercial | Our Water | Partners



WaterSense An EPA Partnership Program

Product Search | Meet Our Partners | Contact Us | FAQ | Partner Login

Calculate Your Water Savings

Use this simple calculator to estimate how much water you can save by installing WaterSense labeled products in your home or apartment building.

Calculate Your Water Savings

- How it works
- MS Excel version

- Enter the number of households:
- How many people live in each household?
- What WaterSense labeled products are you interested in installing? (Check all that apply)
 Faucets **Showerheads** **Toilets**

How will the water be heated?
Not sure? Learn more.

When were the existing toilets installed?
Not sure? Learn more.

- Enter the length of time to calculate savings:







Water Saved

Choosing the WaterSense label will save about **31 million gallons**. This is roughly equivalent to **one minute's worth of flow over Niagara Falls** and can save **\$190,000** in water utility bills.

Energy Saved

Energy savings will be about **10 million cu ft of natural gas**. This is roughly equivalent to **heating 100 houses for one year** and can save **\$200,000** in energy bills.

Note: Change the input variables to recalculate new results based on different scenarios.

-  Test Your WaterSense
-  Calculate Your Water Savings
-  Save Water, Energy & Money
-  Find Rebates Near You
-  Start At Home
-  WaterSense For Kids

DID YOU KNOW?

Giving your bathroom a high-efficiency makeover can save you more than just water.
[Learn more >](#)

LOOK HERE

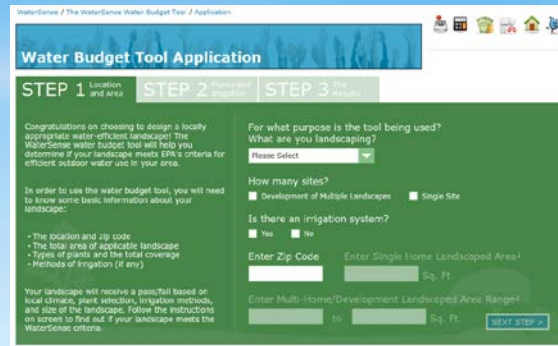
Information for Commercial, Education, Government, Professional and more.



WaterSense Labeled New Homes

Key Steps:

- Understand the program & get executives on board
- Add an inspection service provider to your team
- Review with suppliers & trades
- Two critical areas:
 - Hot water distribution
 - Landscape design
- Leverage your investment with effective marketing



Item	Criteria	Yes	No	NF	Doc?
Indoor Water-Efficiency Criteria					
Leaks	3.1 Pressure loss test on all water supplies detected no leaks	X			
	No visible leaks from hot water delivery system	X			
	No visible leaks from toilets/Urinals	X			
	No visible leaks from bathroom faucets	X			
	No visible leaks from kitchen faucets	X			
Service pressure	3.2 Pressure loss test on all water supplies detected no leaks	X			
	Pressure loss test on all water supplies detected no leaks	X			
Hot water delivery	3.3 Acceptable system type	X			
	Pressure loss test on all water supplies detected no leaks	X			
Toilets	3.4.1 WaterSense labeled	X			Req.
Urinals	3.4.2 WaterSense labeled	X			Req.
Bathroom sink faucets	3.5.1 Measured flow rate-maximum 1.5 gpm (Flow test maximum: 0.25 gallons)	X			Req.
	3.5.2 Measured flow rate-maximum 2.2 gpm (Flow test maximum: 0.4 gallons)	X			Req.
Showerheads	3.6 Measured flow rate-maximum 2.5 gpm (Flow test maximum: 0.4 gallons/compartiment)	X			Req.
	Separate controls for showerheads if > 2100 in ²	X			Req.
Dishwashers	3.7.1 ENERGY STAR qualified	X			Req.
Clothes washers	3.7.2 ENERGY STAR qualified	X			Req.
	Water factor < 0.6	X			Req.
Evaporative cooling system	3.8.1 Acceptable system type	X			Req.
	Maximum 3.5 gallons per hour cooling, maximum 3 above-freeze & 24 hours	X			Req.
Water softeners	3.8.2 Certified to NSF/ANSI Standard 44, including voluntary efficiency rating standards in Section 7	X			Req.
	3.8.3 NSF/ANSI certified, minimum efficiency rating 85%	X			Req.



WaterSense Labeled New Homes



Save up to 20% on your water bills with a WaterSense labeled new home.

- highly efficient WaterSense labeled plumbing fixtures
- water-wise landscaping and irrigation systems
- ENERGY STAR™ qualified dishwashers
- saves energy as well as water

ALL AT NO EXTRA COST TO YOU
That's better for the environment and your budget.



Roseville homes are good till the last drop

Local KB development is first to meet new EPA water standards

BY LEN HOANG
CONSUMER SERVICES
You might not think about the one or two minutes spent waiting for shower water to warm up. But KB Home does, and it's working to eliminate that and other water waste in new homes. Last week in Roseville, KB completed four model homes, the first endorsed by the Environmental Protection Agency's WaterSense.

Launched in 2006, the voluntary EPA program does for water what Energy Star does for, well, energy. WaterSense has been stamping its approval on toilets, showerheads and faucets since 2007. Now combining those products, houses must reduce water usage by 20 percent to earn the WaterSense label.

"The label for new homes is kind of a way to bring the package together on a residential level," said Alicia Marrs, marketing and outreach coordinator for WaterSense homes.

Speaking from Washington, D.C., Marrs noted the City of Roseville has been particularly active in conserving water.

Each of the 118 upcoming Springwood houses near Tidgmont Road north of Blue Oaks Boulevard will meet WaterSense standards, according to

KB. One way to do this is to use an on-demand hot water system. Rather than turn a nozzle and leave water running as it warms, consumers have two choices: Set a timer so the system knows when to prepare hot water regularly, or press a button to circulate and heat water before it starts flowing.

Both options hold water until warm enough for use and reduce wait time, which can add up. "Unfortunately, a lot of people who know they have to wait turn on the water and walk away, and that 1.5 minutes can turn into five minutes," said Lisa Brown, the city's water conservation administrator. She said Roseville has started to require either the timer or button in recent years.

The EPA estimates that each year, these measures will save 10,000 gallons of water inside each home.

KB houses include Energy Star dishwashers and toilets that use less water. Outside, KB has installed a drip system that feeds directly into plants, rather than the wasteful spraying of traditional sprinklers. It also has deposited less turf and plants that require less moisture.

In addition, a timer similar to the one indoors can be programmed to

distribute water on a set schedule, adjusted to suit weather conditions.

"It takes the guesswork out of how long and how often to irrigate," Brown said.

While interior fixtures automatically reduce water and energy bills, landscaping costs are harder to predict, particularly in the early stages of new ownership.

Those are some of the kinks still to be worked out through trial and error.

"This is a learning process for everyone," said KB corporate communications director Craig LeMessurier.

He would not release the cost of upgrading houses to meet WaterSense criteria. LeMessurier said KB would absorb those expenses rather than pass them on to owners of the new houses, which begin at \$259,000.





Jacob Atalla

jatalla@kbhome.com



WaterSense & the Portland Water House

WaterSmart Innovations Conference 2011

Anne Hill—Portland Water Bureau



Portland's Water System



From Forest to Faucet...the Portland Water Bureau delivers the best drinking water in the world

Water House Background



Construction



Project Scope

Located on a 12,500 square foot vacant lot:

- 3 bedrooms, 2 bathrooms (2,119 sq ft) & attached garage (436 sq ft).
- A 600 square foot guest house (Accessory Dwelling Unit) that includes 1 bedroom and bath.
- Includes water efficient and nature-friendly landscaping.
- The Water House is open for classes & tours during 2011.





Partnerships



Thank You Sponsors!

\$15,000 and above

- [Pratt and Larson](#)

\$10,000 - \$14,999

- [Fisher & Paykel](#)
- [Kohler](#)
- [Neil Kelly Cabinets](#)
- [Sapa Profiles, Inc.](#)
- [Daikin Mini Split Heat Pumps/Sun Glow Inc.](#)
- [Western Spray Foam](#)

\$5,000 - \$9,999

- [Cascade Radon](#)
- [General Pacific/Convectair](#)
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- [McGee Salvage](#)
- [Life Breath HRV & Comfort Solutions](#)

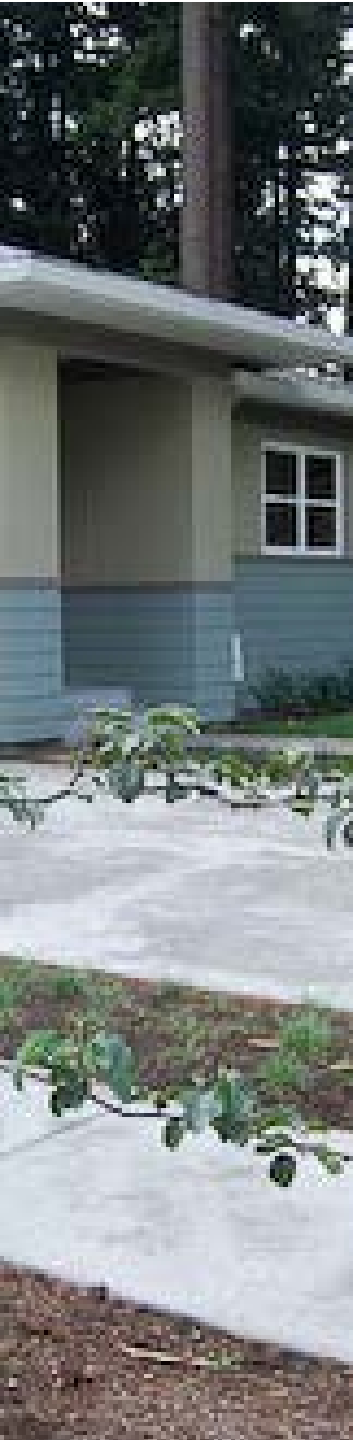
\$1,000 - \$4,999

- [Atrium Companies](#)
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- [Gary's Vacuflo](#)
- [InFuez, Inc.](#)
- [Rheem/Marathon Water Heaters](#)
- [MetroPaint](#)
- [Overhead Door](#)

Up to \$1000

- [Basco](#)
- [Hobbs & Hopkins](#)





Certifications

Earth Advantage Platinum

Energy Star

(exceeding 2008 building code by at least 30%)

WaterSense





- Requires WaterSense labeled plumbing fixtures, efficient hot water delivery systems, and yards designed for water conservation.
- If included, clothes washers and dishwashers must be ENERGY STAR® qualified models.
- Irrigation systems must be designed/installed and audited by WaterSense partners.
- Should save homeowner 10,000 gallons annually and \$100-200 on utility bills.
- Payback estimated at six years.



Earth Advantage Institute (EAI)

Certification programs

- Earth Advantage New Home (single, multifamily)
- Earth Advantage Existing Home
- LEED for Homes
- Earth Advantage Community
- Earth Advantage Commercial
- WaterSense Provider



Education programs

- Sustainable Home Professional
- STAR Realtor
- Earth Advantage Appraiser
- What is Green Building?



Carbon Advantage

- Carbon footprint
- Climate change cost benefit/risk assessment



Consulting and Technical services

Energy Performance Score (EPS)



Water House: Water Budget Calculator

WaterSense Single-Family New Home Specification: Water Budget Tool (V 1.01)

This water budget tool shall be used to determine if the designed landscape meets Criteria 4.1.1.1 of the specification. Please refer to the WaterSense Water Budget Approach for additional information.

Your Name:
Builder Name:
Lot Number/Street Address:
City, State, Zip Code:

Peak Watering Month:

Is an irrigation system being installed on this site?



This worksheet determines if the designed landscape meets the water budget.

If the landscape water requirement is LESS than the landscape water allowance, then the water budget criterion is met.
If the landscape water requirement is GREATER than the landscape water allowance, then the landscape and/or irrigation system needs to be redesigned to use less water.

STEP 3A - REVIEW THE LWA AND LWR FROM PART 1 AND PART 2

LWA (gallons/month) LWR (gallons/month)

STEP 3B - REVIEW THE TOTAL AREA OF TURFGRASS* IN THE DESIGNED LANDSCAPE FROM STEP 2B

The designed landscape contains square feet of turfgrass.* This is of the landscaped area.

*This includes the area of any pools, spas, and/or water features, designated by WaterSense to be counted as turfgrass.

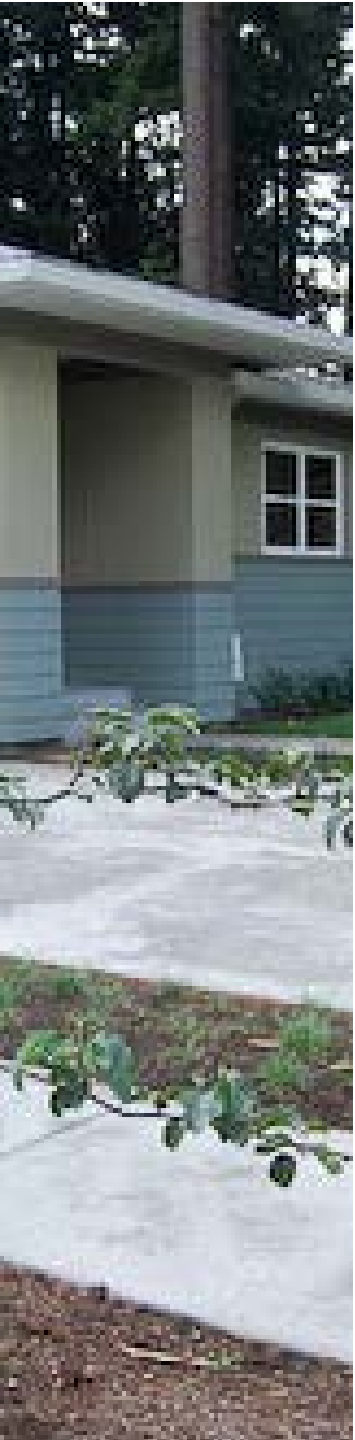
OUTPUT - DOES THE DESIGNED LANDSCAPE MEET THE WATER BUDGET?

If YES, then the water budget criterion is met.

If NO, then the landscape and/or irrigation system needs to be redesigned to use less water.

The designed landscape water requirement is a reduction in water use from the baseline calculated in Part 1.





The Water House: Innovative Indoor Design

- Plumbing fixtures donated by Kohler
- Marathon hot water heater
- Structured plumbing
- Gray water system will be designed to allow for reuse for toilet flushing.
- Monitoring system will provide homeowner with real time statistics - info will increase water & energy consumption awareness

WaterSense Fixtures



Water House: Innovative Landscaping



Lessons Learned



Stay in Touch:

Anne Hill – Principle Management Analyst

Portland Water Bureau –

www.portlandoregon.gov/water/waterhouse

(503) 823-4807

Andrew Shepard – Green Building Consultant

Earth Advantage Institute –

www.earthadvantage.com

(888) EARTH33

