This presentation premiered at WaterSmart Innovations

watersmartinnovations.com





Implementing WaterSense® Labeled Homes Version 2.0

Agenda



This is a double session (we will go until 2:10 PM)

- 1:00-1:40 PM: Presentations (PechaKucha style)
 - Jonah Schein (moderator)- EPA WaterSense
 - Cindy Wasser- Home Innovations Research Labs
 - Pete DeMarco- IAPMO
 - Mike Collignon- Green Builder® Coalition
 - Ryan Meres- RESNET
- 1:40- 2:10 PM: Discussion and Q&A
- Please feel free to come and go as you need to
 - If you are headed to another session, we do not plan to stop at 1:30 though
 - Please do your best to be quiet and respectful



WaterSense® Labeled Homes Version 2.0



History of WaterSense Labeled Homes



- Version 1.1
 - Removed one of two options for the outdoor requirements
 - Modified product requirements to include WaterSense labeled showerheads and WBICs
- Version 1.2
 - Included minor changes to reflect removal of irrigation partners from the program
- Version 2.0
 - Wholesale change to methodology in the technical and certification requirements



Challenges With V1: Lack of Flexibility



Ex: Hot Water Distribution Requirements



Challenges With V1: Variable Value Proposition

S

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In to lar

You loc and on

TEP 1 Location STEP 2 Plants and Area	ion STEP 3 The Results
ngratulations on choosing to design a locally propriate water-efficient landscape! The terSense water budget tool will help you termine if your landscape meets EPA's criteria for cient outdoor water use in your area.	For what purpose is the tool being used? What are you landscaping? WaterSense Labeled Home(s) 🔽
order to use the water budget tool, you will need know some basic information about your dscape:	How many sites? Development of Multiple Landscapes X Single Site Is there an irrigation system?
The location and zip code The total area of applicable landscape Types of plants and the total coverage Nethods of irrigation (if any)	 ✓ Yes No Enter Landscaped Area Enter Zip Code for a Single Home or Site¹ 75751 5000 Sq. Ft.
Ir landscape will receive a pass/fail based on al climate, plant selection, irrigation methods, d size of the landscape. Follow the instructions screen to find out if your landscape meets the terSense criteria.	Enter Multi-Home/Development Landscaped Area Range ⁱ to Sq. Ft. NEXT STEP >

Ex: Outdoor Requirements



Challenges With V1: Inflexible Certification Structure



Ex: Certification System focused on process not outcome



Indoor Water Use: Pre & Post-EPACT



2000s Stock Plumbing Products



- 3 bedroom
 - 1.5 bath
 - 2,400 ft²



WaterSense Labeled Plumbing Products



Requirements for WaterSense Labeled Homes V2

Technical Requirements for
WaterSense Labeled Homes

Requirements for Home Certification Organizations (HCOs)

- Be 30% more efficient than typical new construction
- Meet all items of a mandatory checklist
- Organizational requirements
- Certification method development
- Certification method technical evaluation



Evaluation Process for Proposed Certification Methodologies

Like a stress test to ensure the proposed methodology can differentiate homes that reduce water use by at least 30% from those that don't



Mandatory Checklist for WaterSense Labeled Homes



ltem	Requirements	Confirmed	
	Pressure-loss test on all water supplies detects no leaks	🔲 Yes	🔲 No
	Free of visible leaks from toilet(s), as determined through visual assessment and by conducting a dye tablet test in each toilet to ensure the flapper is not leaking	🔲 Yes	🔲 No
	Free of visible leaks from bathroom faucet(s)	🔲 Yes	🔲 No
	Free of visible leaks from showerhead(s)	🔲 Yes	🔲 No
Leaks	Free of visible leaks from bathroom tub faucet(s), i.e., tub spout(s), when showerhead(s) is activated, as determine through visual assessment after showerhead has been activated for one minute	🔲 Yes	🔲 No
	Free of visible leaks from kitchen and other sink faucet(s)	🔲 Yes	🔲 No
	Free of visible leaks from other fixtures or appliances (e.g., water heaters, clothes washers, dishwashers, hose bibs, irrigation systems) at point of use or point of connection to water distribution system	🔲 Yes	🔲 No
Toilets	WaterSense labeled [*]	🔲 Yes	🔲 No
Bathroom sink faucets	WaterSense labeled*	🔲 Yes	🔲 No
Showerheads	WaterSense labeled*	🔲 Yes	🔲 No









Duluth, MN 27% 73% Indoor Outdoor



- 4 bedroom
 - 2,400 ft²
- 4,400 ft² acre lot



4,400 ft² lot Duluth, MN



Outdoor

■ Indoor

- 4 bedroom
 - 2,400 ft²



¹⁄₄ acre ft² lot Phoenix, AZ

look for





Baseline: Los Angeles, California



0% water savings

(estimated)



- 3 bedroom 2,400 ft²
 - 1.5 bath ¼ acre lot



Mandatory Checklist: Los Angeles, California



3.4% water savings

(compared to Baseline Home)



- 3 bedroom 2,400 ft²
 - 1.5 bath ¼ acre lot



California "Code": Los Angeles, California



13.4% water savings

(compared to Baseline Home)



- 3 bedroom 2,400 ft²
 - 1.5 bath ¼ acre lot



WaterSense Eligible: Los Angeles, California



37.2% water savings

(compared to Baseline Home)



- 3 bedroom 2,400 ft²
 - 1.5 bath ¼ acre lot







WaterSense Labeled Homes V2





look for



Transitioning From V1 to V2

Potential dates (for example)	Requirements
January 1, 2020 to June 30, 2020	Any home may use either the v1 or v2 requirements
July 1, 2020 to December 31, 2020	Homes permitted prior to the start of the transition period may use v1 or v2, all other homes must use v2
After January 1, 2021	All homes use v2



While You Listen to the Speakers...

- Does the organization have a valid way to differentiate homes that do and do not meet the efficiency requirement?
- Do they have a clear structure to verify this in the field? Do they have an oversight structure to ensure this is done properly?
- How are they the same and how are they different?



NGBBS GREEN



Mission: Improve quality, durability, affordability, & environmental performance of homes

Home Innovation Research Labs

- Founded in 1964
- Focused on residential construction
- Clients are architects, builders, developers, and product manufacturers
- Four categories of services:
 - Market Research
 - Product testing
 - Applied building science research
 - Standards developer
 - Accredited third-party lab and certification agency



- Voluntary, above-code green certification program
- For all residential occupancies
- American National Institute of Standards (ANSI) approved
- Part of ICC suite of I-Codes
- ASHRAE Standard
- Alternative compliance path for residential development within IgCC



NATIONAL GREEN BUILDING STANDARD

LCC/NAHB 700-200







Three-year Development Cycle

2020 NGBS

- Expected to finish late 2019
- Major Revisions
 - Allow non-residential uses <49% of building
 - Specifically allows assisted living, dorms
 - Sets 2018 IECC, IRC, IBS as baseline
 - Allows recognition of phased renovations
 - Water efficiency performance path
- <u>www.homeinnovation.com/ngbs</u>



What makes NGBS different?

Comprehensive

- Practices for design, construction, verification, and operation
 - Written in code language
 - Few mandatory provisions
 - Expansive, flexible point-based system
 - Includes tropical climate zone provisions

ICC/ASHRAE 700-2015 National Green Building Standard[™]



Categories of NGBS Green Practices

Lot Design, Development

Resource Efficiency

Energy Efficiency

Water Efficiency

Indoor Environmental Quality

Operation & Maintenance

NGBS Compliance

- Mandatory Practices
 - No exemptions
 - No points
 - Ensures baseline code compliance
- Voluntary Practices
 - Awards points
 - Points based on difficulty level
 - Design, product/system selection, or constructionbased practices



2015 NGBS Point Requirements: Comprehensive & Rigorous

Green Building Categories		Rating Level Points (1) (2)				
		BRONZE	SILVER	GOLD	EMERALD	
1.	Chapter 5	Lot Design, Preparation, and Development	50	64	93	121
2.	Chapter 6	Resource Efficiency	43	59	89	119
3.	Chapter 7	Energy Efficiency	30	60	80	100
4.	Chapter 8	Water Efficiency	25	39	67	92
5.	Chapter 9	Indoor Environmental Quality	25	42	69	97
6.	Chapter 10	Operation, Maintenance, and Building Owner Education	8	10	11	12
7.		Additional Points from Any Category	50	75	100	100
		Total Points:	231	349	509	641



Certification program

- Home Innovation serves as Adopting Entity
- Accredit third-party Verifiers to inspect residential buildings for NGBS compliance
- Certify homes and multifamily buildings as in compliance with NGBS
- Recognized by US Dept. of Housing and Urban Development (HUD), Fannie Mae, Freddie Mac
- Certification is conferred when construction complete, ongoing or post-occupancy certification is not required

NGBS Green Process from Builder's Perspective



Design Phase

Score the building Serves as Verifier checklist for inspections



Hire Verifier

Verifier registers buildings Registration is free Verifier explains process, requirements



Construction

Verifier notifies of inspections Inspections pre-drywall and final For MF, every unit visually inspected

-	

Earn NGBS Certification

Certification fee paid to Home Innovation

On completion of final inspection

Issued within one-business day
Certification Program Philosophy

- Eliminate barriers
 - Costs (real/perceived; direct/indirect)
 - Difficulty/Inflexibility
 - Processing or documentation hurdles
 - Be a partner
 - Create incentives
- Provide construction QA/QC
- Pivot as necessary



Nearly 200,000 homes certified to date.

NGBS Project Type	Certified	In Process
Single-Family Homes (new & remodeled) *	1 5,986	5,483
Multifamily Buildings (new)	4,350	2,591
Unit count Multifamily Buildings (new) *	169,381	127,561
Multifamily Buildings (remodeled)	475	364
Unit count Multifamily Buildings (remodeled) *	5,477	6,289
Land Developments	27	8
Lots within NGBS Land Developments	1,683	24,501

Home Innovation as HCO

- Opportunity to offer streamlined experience for builders to obtain green certification and WaterSense label together
- Leverage Home Innovation's residential construction expertise and certification experience
- Eligibility:
 - New Construction projects, both single-family and multifamily
 - Projects must be pursuing certification under 2020 NGBS
- Compliance criteria: Potential for both prescriptive and performance-based criteria (point threshold and/or WRI score to meet 30% target TBD)



Home Innovation Research Labs



2020 NGBS Water Efficiency Chapter Compliance (Chapter 8)



Water Rating Index

- Based on WERS (Water Efficiency Rating Score)
- Performance calculation between 0-100
- Available for both single-family and multifamily new construction
- Addresses indoor and outdoor water use and recapture



WRI Training for NGBS Green Verifiers

New water efficiency verifier training to include:

- Explanation of water efficiency practices
- Use of WRI calculator tool
- Documentation review
- Physical field testing

Likely to be offered individually and in conjunction with NGBS Green Verifier accreditation training



Water Performance Path Process



Scoring –utilize Excel-based water calculator tool to calculate baseline and preliminary WRI based on plans



On-Site Verification—NGBS Green Verifier confirms water features that contribute toward WRI scoring



Review—WRI Scoring reviewed by Home Innovation as part of certification packet. Achievement of NGBS Green and WaterSense New Homes certification to be evaluated at the same time



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HomeInnovation.com/Green HomeInnovation.com/GreenProducts Find a better place to call home: ngbs.com





WEStand

The Water Efficiency and Sanitation Standard An American National Standard

Pete DeMarco The IAPMO Group pete.demarco@iapmo.org

Why is **WE** Stand Needed?



Why is WE Stand Needed?

- Fills a need for an American National Standard that focuses solely on Water Efficiency in and around buildings
- Applies to both residential and non-residential buildings



Why is WE Stand Needed?

- Publication as a standard allows for multiple means of adoption
- Allows for bringing together the <u>best</u> minds in the water efficiency and plumbing industries to develop a robust and comprehensive standard



Who Develops WE Stand?

- EXECUTIVE COMMITTEE IAPMO CEO, IAPMO COO, AND SENIOR VP OF ADVOCACY AND RESEARCH WHO GOVERN THE TECHNICAL COMMITTEE
- SECRETARIAT (IAPMO) MAINTAINS RECORDS AND ROSTER, PUBLISHES REPORTS, OVERSEES COMPLIANCE WITH REGULATIONS

Technical Committee (TC)

Voting Members - Develops the technical content in WE Stand. Need to be balanced by interest categories

• Task Groups (TGs)

Heavy Lifters! Created by the TC to drill down into specific topics or problems and develop proposals.

 Technical Correlating Committee Resolves conflicts with other codes, correcting errors and omissions

WE STAND SUPPORTING ORGANIZATIONS



What's In It? WE Stand Table of Contents

- ADMINISTRATION
- DEFINITIONS
- GENERAL REGULATIONS
- WATER EFFICIENCY AND CONSERVATION
- ALTERNATE WATER SOURCES FOR NONPOTABLE APPLICATIONS
- NONPOTABLE RAINWATER CATCHMENT SYSTEMS
- WATER HEATING DESIGN, EQUIPMENT AND INSTALLATION
- INSTALLER QUALIFICATIONS
- REFERENCED STANDARDS
- APPENDICES

POTABLE RAINWATER CATCHMENT SYSTEMS

VACUUM DRAINAGE SYSTEMS



What's In It? Water Efficiency for Indoor and Outdoor Uses

- Fixtures, Fittings & Appliances Thoughtful provisions for <u>safe and</u> <u>efficient</u> consumption and flow rate requirements
- Composting Contains the first set of comprehensive codified requirements for composting and urine diversion toilets – for commercial and residential applications.







What's In It? Water Efficiency for Indoor and Outdoor Uses

- Leak detection Important new safety provisions for leak detection systems
- Landscape Irrigation Important new provisions for system inspection and performance.
- New pool pumps requirements for water and energy efficiency







What's In It? Alternate Water Sources

- Progressive provisions for non-potable uses of gray water generated from clothes washers to landscape irrigation.
- New requirements that reduce the cost of retrofitting gray water systems in single family homes.
- Allows for the installation of rainwater catchment systems up to 5000 gallons for non-potable uses without requiring inspections under certain conditions, reducing costs to owners





What's In It? Hot Water Efficiency and Pipe Sizing

This is a big deal!

The first comprehensive pipe sizing method advancement since the 1940's

 Works with all pipe materials and <u>residential</u> systems of all sizes, even multifamily.



What's In It? Hot Water Efficiency and Pipe Sizing

Results in:

- shorter water dwell times in premise plumbing systems
- improves water quality
- faster hot water delivery time
- saves energy, water and \$ at a reduced construction cost!



[A] FIXTURE		[B] ENTER NUMBER OF FIXTURES	[C] PROBABILITY OF USE (%)	[D] ENTER FIXTURE FLOW RATE (GPM)	[E] MAXIMUM RECOMMENDED FIXTURE FLOW RATE (GPM)		
1	Bar Sink	0	2.0	1.5	1.5		
2	Bathtub	0	1.0	5.5	5.5		
3	Bidet	0	1.0	2.0	2.0		
4	Clothes Washer	1	5.5	3.5	3.5		
5	Combination Bath/Shower	1	5.5	5.5	5.5		
6	Dishwasher	1	0.5	1.3	1.3		
7	Kitchen Faucet	1	2.0	2.2	2.2		
8	Laundry Faucet	0	2.0	2.0	2.0		
9	Lavatory Faucet	1	2.0	1.5	1.5		
10	Shower, per head	0	4.5	2.0	2.0		
11	Water Closet, 1.28 GPF Gravity Tank	1	1.0	3.0	3.0		
12	Other Fixture 1	0	0.0	0.0	6.0		
13	Other Fixture 2 0 0.0		0.0	0.0	6.0		
14	Other Fixture 3	0	0.0	0.0	6.0		
_	Total Number of Fixtures	6			RUN WATER		
9	9th PERCENTILE DEMAND FLOW =	8.5	GPM	RESET	DEMAND CALCULATOR		

Typical Pipe Size Reductions: Single Family = 1 pipe size Multi-family = Up to 3 pipe sizes!

Where and How Does it Happen?

All WE Stand meetings are convened in Ontario, CA

Two Stages of Development:

1. Proposal Stage

- a) Call for submission and publication of proposals
- b) Open meeting for TC actions on the proposals
- c) Letter Ballot affirmation on TC actions
- d) Publication of the Report on Proposals

Where and How Does it Happen?

All WE Stand meetings are convened in Ontario, CA

Two Stages of Development:

2. Comment Stage

a) Call for public comments on TC actions in the ROP
b) Open meeting for TC actions on the public comments
c) Letter ballot affirmation on TC actions
d) Publication of the Report on Comments

When Does it Happen? Key Remaining for the 2020 Cycle

November 28, 2019.... February 27, 2020.....

March 24-25, 2020
April 17, 2020
May 1, 2020
May 15, 2020

July 15, 2020..... September 29, 2020....

November 12-13, 2020

Deadline for Submission of Public Comments Distribution of Public Comments to Committee (Public Comment Monograph) Technical Committee Meetings, Ontario, CA Initial Ballots to Technical Committees **Receipt of Initial Ballots and Circulation of Comments** Final closing date for ballots, including receipt of vote changes based on re- circulated comments Distribution of *Report on Comments (ROC)* Deadline for Notification of Intent to File Written Petition to the Executive Committee Executive Committee Meet to Address Petitions

What's Next for the 2020 WE Stand?

- Alternate Water Sources
 - New requirements for stormwater treatment and uses
 - New requirements for black water treatment and uses
- Net Zero Water and Waste
 - Considerations for safely attaining net-zero water and waste performance in buildings



What's Next for the 2020 WE Stand?

- Premise Water Supply Systems
 - Efficient Arrangement of plumbing fixtures Compact Distribution Strategies – improves water and energy efficiency and water quality
 - Appropriate uses and maximum length requirement for 3/8" diameter tubing



What's Next for the 2020 WE Stand?

- Composting and Urine Diversion Toilets
 - Informative Appendix on installation and maintenance
- Sustainable Drinking Water Treatment
 - New references of industry standards

Help shape the future of safe and sustainable water WE Stand is where it happens!



WE Thank you!! WE Thank you!! WE Stand



Water Efficiency and Sanitation for the Built Environment

FOR MORE INFORMATION VISIT

HTTP://WWW.IAPMO.ORG/WESTAND/PAGES/DEFAULT.ASP>

The Green Builder[®] Coalition

- National, non-profit membership organization for green building professionals
- Founded in 2010
- Offers information, technical assistance and advocacy services
- Administers the WERS Program



What is the Water Efficiency Rating Score?





WERS = 70



WERS = 50



3rd Party

The WERS tool can be used by homeowners, architects, builders, utilities and municipalities to arrive at a simple metric to compare new or existing, single-family or multifamily properties

WERS Abbreviated Timeline

- Oct. 2013 SFAHBA & City of Santa Fe WCC brainstorm
- Feb. 2014 Engage Coalition for tech assistance, computer programming, national administration
- Today WERS is allowed in 2 codes, 1 tax credit, pending in 2 national green building programs



Water Efficiency Rating Score (WERS)®

- Outputs
 - Score: 0-100
 - Projected Usage in Gallons: Daily, Monthly and Yearly
 - Projected Water Costs: Daily, Monthly and Yearly
 - Existing Homes Compare Existing Conditions to Improvements

Water Efficiency Rating Score (WERS)®

- Partner Discounts
 - 45% TSV showerheads
 - 20% rainwater or graywater
 - 20% irrigation controllers
 - 20% ultra-low water turfgrass









Inputs (Indoor)

- Faucets
- Toilets
- Showers/Tubs
- Structural Waste
- Reuse Systems (Rain, Gray, Black)
- Clothes & Dish Washers
- Fridge w/ Water Dispenser
- RO/Water Softeners
- Hot Tubs/Fountains/Pools

	Fixture or Appliance	Industry Baseline (Items A - F2) GPF / GPM / GPC / etc.	Preliminary Units GPF / GPM / GPC / etc.	Applicable to Preliminary?	Final Verified Units GPF / GPM / GPC / etc.	Applicable to Final?	Preliminary Daily Use in Gallons	Preliminary Gallons Saved Over Baseline	Percent Saved Per Fixture (Baseline vs. Preliminary)	Final Daily Use in Gallons	Final Verified Gallons Saved Over Baseline	Percent Saved Per Fixture (Baseline vs. Final)
	Toilet (GPF) Using verfied 1.28	1.60	1.28	Y	1.28	Y	32.00	8.00	20.00%	32.00	8.00	80.00%
	Showerhead (GPM) Using verfied 1.346	2.50	1.50	Y	1.35	Y	40.37	26.91	40.00%	36.22	31.05	53.84%
	Bathtub (GPU)	20.20	20.20	Y	20.20	Y	7.07	0.00	0.00%	7.07	0.00	NONE
	Lavatory (GPM) Using verfied 1.224	2.20	1.50	Y	1.22	Y	9.38	4.38	31.82%	7.65	6.10	55.64%
	Sink (GPM) Using verfied 1.8	2.20	2.00	Y	1.80	Y	40.00	4.00	9.09%	36.00	8.00	81.82%
	Dishwasher (GPC) Using verfied 3.5	6.50	5.80	Y	3.50	Y	2.90	0.35	10.77%	1.75	1.50	53.85%
r	Clothes Washer CF Using verfied 4.5		4.00		4.50							
	Clothes Washer iWF Using verfied 3.2	9.50	4.30	Y	3.20	Y	25.80	31.20	54.74%	21.60	42.53	33.68%
	Water used to reach 100 degrees (GPU WERS estimated)	2.54	1.20		2.75		0.00	0.00	0.00%	13.75	0.00	NONE
	Separate Master Tub?	N	N		N							
	HW Recirc System?	N	N		N							

Inputs

• Indoor:

- Faucets
- Showers/Tubs
- Clothes & Dish Washers
- Fridge w/ Water Dispenser
- RO/Water Softeners
- Hot Tubs/Fountains/Pools
- Reuse Systems (Rain, Gray, Black)
- Structural Waste

• Outdoor:

- Irrigation Systems
- All Plantings
- Soil Type/Grade
- Roof Type
- Pervious & Impervious Surfaces
- Pools
- Rainwater & Graywater Systems

WERS Training

- WERS Verifier
 - 3-day course
 - Classroom & Field Training
 - Proctored Exams (Written & Field)
 - 3 Probationary Verifications
- WERS Consultant
 - 2-day course
 - Classroom Training
 - Proctored Written Exam
 - 2 Probationary Assessments (based on plans, drawings)
- Santa Fe Community College
 - BPI-accredited Test Center
 - Hosted Inaugural Course in March 2016
 - Info: <u>www.energysmartacademy.com/water.html</u>


- Jurisdictions/Municipalities
 - Tax credits/Financial incentives
 - WERS cited in the rules for compliance of NM Sustainable Building Tax Credit since Jan. 1, 2017
 - Support of codes, regulations, and enforcement
 - Went into effect in the City of Santa Fe March 1, 2017
 - All new single-family properties must submit a preliminary WERS of 70 (or less) with their building permit application, and a verified 70 (or less) to obtain a certificate of occupancy
 - City of Santa Barbara, CA allows 3rd party programs as code compliance option for multifamily as of Sept. 2018



- Green Building Programs
 - Built Green Canada
 - Metric added to the WERS Tool in Q2 2019
 - Piloting WERS in 2019; Full implementation expected in 2020
 - Verifier Training occurred May 2019



- Green Building Programs
 - Built Green Canada
 - Metric added to the WERS Tool in Q2 2019
 - Piloting WERS in 2019; Full implementation expected in 2020
 - Verifier Training occurred May 2019
 - National Green Building Standard
 - WRI (generic WERS) will be in 2020 NGBS (ANSI Standard)
 - Applicable to multifamily & single-family
 - Alternative compliance path for water efficiency
 - Scale
 - 70 Bronze
 - 60 Silver
 - 50 Gold
 - 40 Emerald



- Jurisdictions/Municipalities
 - Potential financial incentives
 - Reduced storm water impact fees
 - Reduced tap fees
 - Shortened permit review time



Quality Control/Quality Assurance

- QC:
 - QC Entity is Required
 - Raters Can Utilize Existing Provider(s) for QC

- QA:
 - TIC is Selected at Project Initiation
 - QC is Confirmed Pre-Submittal
 - QC Entity is subject to QA





WERS – Triconic Partnership

- Green Builder[®] Coalition needed to scale WERS
- Combining with energy ratings creates efficiencies



WERS – Triconic Partnership

- Green Builder[®] Coalition needed to scale WERS
- Combining with energy ratings creates efficiencies
- UL, Intertek label delivers peace of mind to jurisdictions
- Intertek has 5,000 inspectors in North America



Rebate packages

- WERS can help project usage differentials on:
 - Indoor Incentives (i.e., Toilet Retrofits)
 - Outdoor Incentives (i.e., Recharge, Collection & Reuse)
 - Other usage reduction targets
 - Whole property rebates!!

Collaboration on crafting & administering rebate programs



- Utilities & Municipalities: We want to work with you!
 - Incentives
 - Rebates
 - Reduced Fees
 - Codes
 - New Construction
 - Point-of-Sale
- For more info, please pick up a card or e-mail:

Project [·]	Туре	NEW	Single	Home						
Indoor Use and Conservation Summary					DAY	MONTH	YEAR	CPD		
					ONS USED PER	156	4,746	56,955	31	
		RAGE CONSERVATION BASELINE VS.		GALLO	NS SAVED PER	96	2,924	35,084	19	
	AVER						WITHOUT REUSE CREDITS			
					SAVINGS PER	\$3.20	\$97.35	\$1,168.24	\$0.64	
							WITH REUSE CREDITS			
					SAVINGS PER	N/A	N/A	N/A	N/A	
					OVALUACE LIV					
						•				
Outdoor	r Use and	d Conservation S	ummary	(Watering N	Ionths Only)	DAY	WATERING MONTHS	WM / YEAR	CPD	
Outdoor	r Use and	d Conservation S	ummary	(Watering N GALL	Ionths Only)	DAY : 117	WATERING MONTHS 3,504	WM / YEAR 21,025	CPD 23	
Outdoor	r Use and	d Conservation S	ummary	(Watering M GALL GALLO	ONS USED PER	DAY 117 73	WATERING MONTHS 3,504 2,182	WM / YEAR 21,025 13,094	CPD 23 15	
Outdoor	r Use and AVEF	d Conservation S RAGE CONSERVA	ummary ATION	(Watering M GALL GALLO	ONS USED PER	DAY 117 73	WATERING MONTHS 3,504 2,182 WITHOUT RE	WM / YEAR 21,025 13,094 USE CREDITS	CPD 23 15	
Outdoor	r Use and AVER	d Conservation S RAGE CONSERVA BASELINE VS.	ummary ATION	(Watering M GALL GALLO	Ionths Only) ONS USED PER NS SAVED PER SAVINGS PER	DAY 117 73 \$0.44	WATERING MONTHS 3,504 2,182 WITHOUT RE \$13.22	WM / YEAR 21,025 13,094 USE CREDITS \$79.35	CPD 23 15 \$0.09	
Outdoor	r Use and AVEF	d Conservation S RAGE CONSERVA BASELINE VS.	ummary ATION	(Watering M GALL GALLO	Ionths Only) ONS USED PER NS SAVED PER SAVINGS PER	DAY 117 73 \$0.44	WATERING MONTHS 3,504 2,182 WITHOUT RE \$13.22 WITH REUS	WM / YEAR 21,025 13,094 USE CREDITS \$79.35 SE CREDITS	CPD 23 15 \$0.09	

- Utilities & Municipalities: We want to work with you!
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	AVER						WITHOUT REUSE CREDITS			
					SAVINGS PER	\$3.20	\$97.35	\$1,168.24	\$0.64	
							WITH REUSE CREDITS			
					SAVINGS PER	N/A	N/A	N/A	N/A	
					OVALUACE LIV					
						•				
Outdoor	r Use and	d Conservation S	ummary	(Watering N	Ionths Only)	DAY	WATERING MONTHS	WM / YEAR	CPD	
Outdoor	r Use and	d Conservation S	ummary	(Watering N GALL	Ionths Only)	DAY : 117	WATERING MONTHS 3,504	WM / YEAR 21,025	CPD 23	
Outdoor	r Use and	d Conservation S	ummary	(Watering M GALL GALLO	ONS USED PER	DAY 117 73	WATERING MONTHS 3,504 2,182	WM / YEAR 21,025 13,094	CPD 23 15	
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- Utilities & Municipalities: We want to work with you!
 - Incentives
 - Rebates
 - Reduced Fees
 - Codes
 - New Construction
 - Point-of-Sale
- For more info, please pick up a card or e-mail:





Introducing HERS_{H20}

Ryan Meres, Program Director RESNET





RESNET's Network of Certified HERS Raters and Rating Field Inspectors



Get a Home Energy Rating

A comprehensive HERS home energy rating, conducted by a certified RESNET Home Energy Rater is an in-depth energy performance assessment of a home.



HERS[®] Index







HERSH20















Shower Heads



Kitchen Faucet



Lavatory

Faucets



Clothes Washer



Toilet Flush Volume



Water Softener



Leaks/Other

Water Use



Excess Pressure



Irrigation



Pool or Spa



ANSI/RESNET/ ICC 850

Standard for Water Rating Index

American National Standard

ettyimages Icatotodajai

gett RESNET

















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RESNET HERS_{H20} Index



• Water efficiency rating certificate for:

- 100 Sunshine Dr.
- Irvine, CA 90000

Size of home:	1980 sq. ft.
Number of bedrooms:	3
Size of lot:	5000 sq. ft.
Size of irrigated area:	2000 sq. ft.

This Home, Compared to the Reference Home

(Reference home is similarly sized, at same location, with attributes typical of a 2006 home)

32%

34,080

more water efficient gallons of water annual savings

\$175

annual saving on water utility bills

Rated by:

Date: January 19, 2018

Justin Miller Efficiency Unlimited Santa Ana, CA 90000



RESNET Provider Network



Percent of New Homes HERS Rated, 2018





RESNET's quality assurance oversight of HERS Raters begins while they are still candidates and lasts throughout their work as certified HERS Raters:



Once certified, the HERS Rater must undergo the following quality assurance oversight activities annually:

- 10 % of all homes rated must be file reviewed by a certified RESNET Quality Assurance Designee.
 - A non-biased selection of homes is reviewed, accounting for new and existing homes, geographic location, builder, trade contractor, variety of floor plans, etc.
- 1% of all homes rated must be field reviewed by a certified RESNET Quality Assurance Designee.
 - Each home selected for a QA field review for each HERS Rater shall be randomly selected from as many different builders and communities as possible.



"QA Genie"



look for

Discussion Questions

- How does your system measure efficiency? How does it meet the 30% efficiency requirements?
- How do you ensure "verifiers" are qualified for this task?
- How do you/do you to exercise oversight? How do you ensure homes meet all the requirements?
- How does WaterSense labeled homes V2 fit into your organizations priorities?