Urban Land Institute

Water Wise Development Coalition

Marianne Eppig, Director of Resilience, ULI

September 6, 2023

Water Wise Development Coalition

Intro for newbies!

- **Who:** ULI, in partnership with the Alliance for Water Efficiency, the Sonoran Institute, and the WaterNow Alliance, is convening land use and real estate professionals with policymakers and decision-makers. This coalition is supported by the Colorado Water Conservation Board.
- **What:** Advancing water-smart real estate development and supportive policies.
- **When & Where:** Quarterly virtual meetings.
- **How:** Participants will have a say in meeting topics, speakers, and efforts.

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Agenda

- Welcome and Overview (5 min)
  - Group chat introductions: name, title, org, location
  - About the Water Wise Development Coalition
  - Speaker introductions
- Water Wise Development Resources Presentations and Q&A (60 min: 20 min presentation & 10 min Q&A each)
  - **Jonah Schein,** National Program Manager for Homes & Buildings, WaterSense Program, US EPA on WaterSense resources
  - **Mike Collignon,** Executive Director & Co-Founder, Green Builder Coalition about Water Efficiency Rating Score (WERS) resources
- Group Discussion about potential implementation projects (25 min)

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WaterSense® Labeled Homes

Version 2.0

Jonah Schein | WaterSense, U.S. EPA

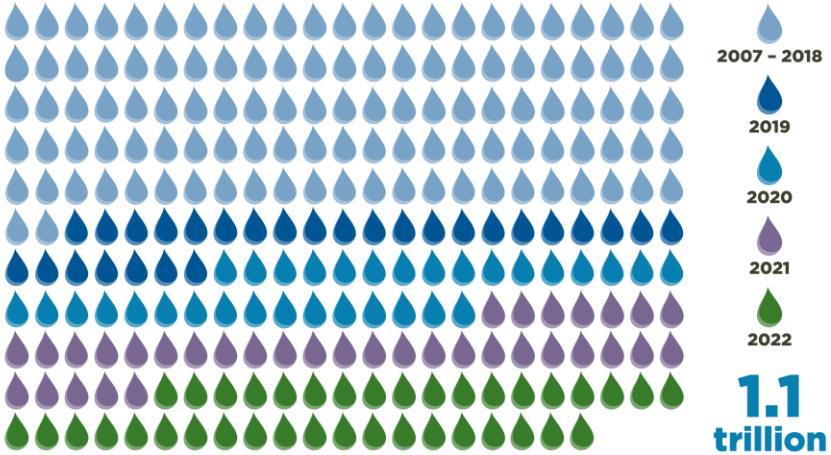
Water Wise Development Coalition| September 2023

- WaterSense & WaterSense labeled homes
  - Why are we here?
- Why building matters to communities
- Why water matters to builders & developers
- WaterSense labeled homes

WaterSense Through 2022

WaterSense partners helped save

7.5 trillion gallons of water

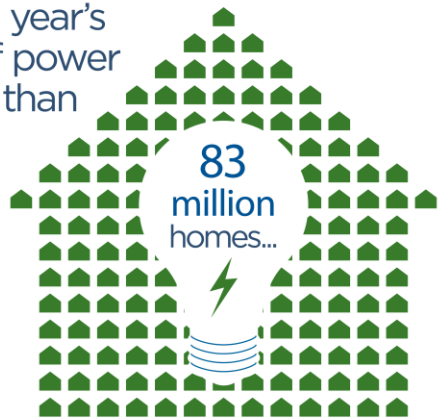


1.1 trillion gallons saved in 2022

That's the water used in **9.5 months** by all U.S. households!

WaterSense has helped reduce the amount of energy needed to pump, treat, and heat water by

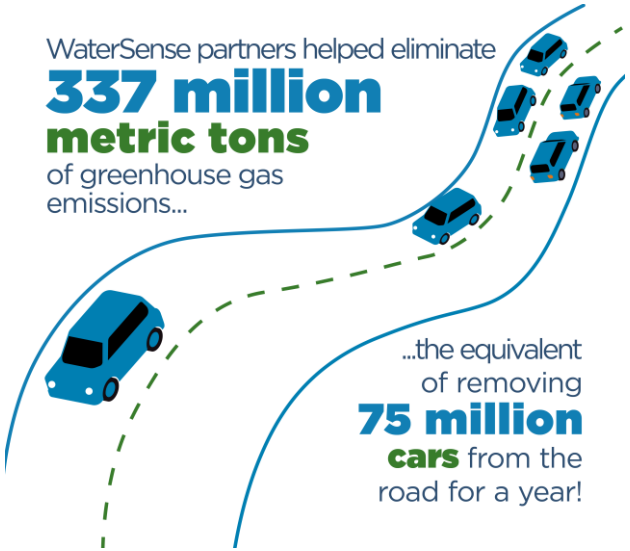
880 billion kilowatt hours, enough to supply a year's worth of power to more than



WaterSense partners helped consumers save

$171 billion in water and energy bills

WaterSense partners helped eliminate **337 million metric tons** of greenhouse gas emissions...



...the equivalent of removing **75 million cars** from the road for a year!

WaterSense Labeled Products

More than **43,000** product models have earned the label. Water factors are included in many **ENERGY STAR** certified products.

Flushing Urinals

Showerheads

Lavatory Faucets

Flushometer Valve Toilets

Tank-Type Toilets

Irrigation Controllers

Spray Sprinkler Bodies

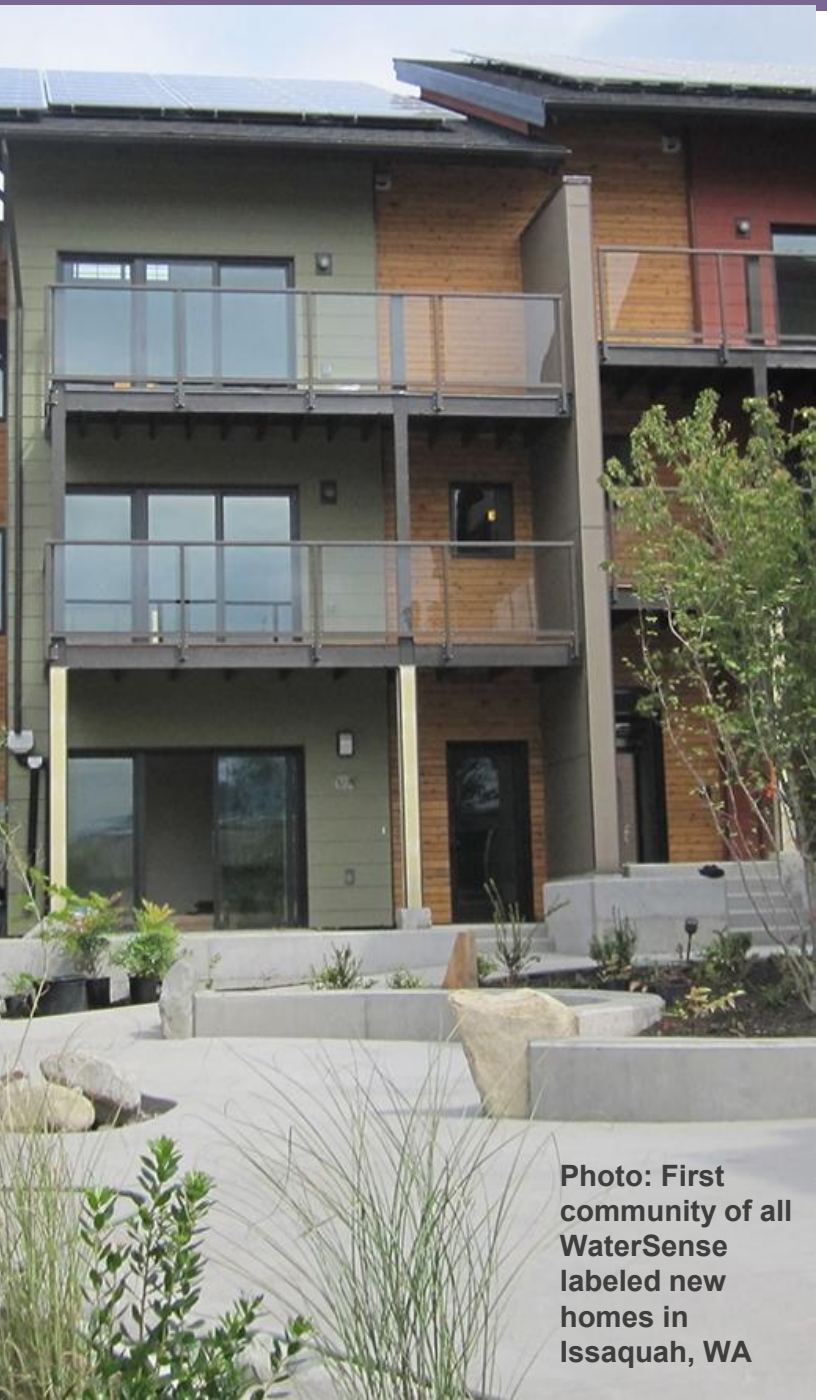


Photo: First community of all WaterSense labeled new homes in Issaquah, WA

WaterSense Labeled Homes

- First national certification for water efficiency
- Provides a consistent and comprehensive approach to efficient homes
- Version 2.0 became effective in 2022:
  - Reduces water use in homes by **at least** 30% compared to code-built homes
  - Are third-party certified using existing certification infrastructure, overseen by EPA
  - Offers more flexibility relative to V1 while maintaining or increasing efficiency
  - Responds to market and climate changes

https://www.epa.gov/watersense/homes

Who has experienced this?

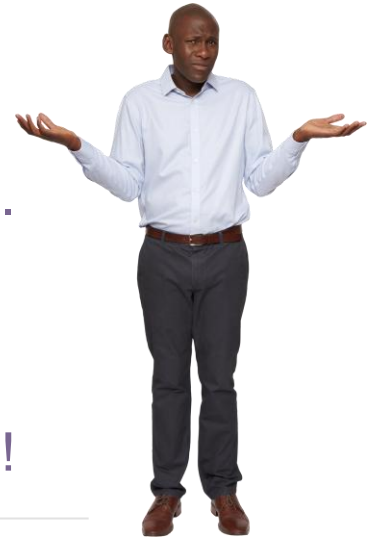
Mayor

We are going to grow this city! It's gonna be great!!!

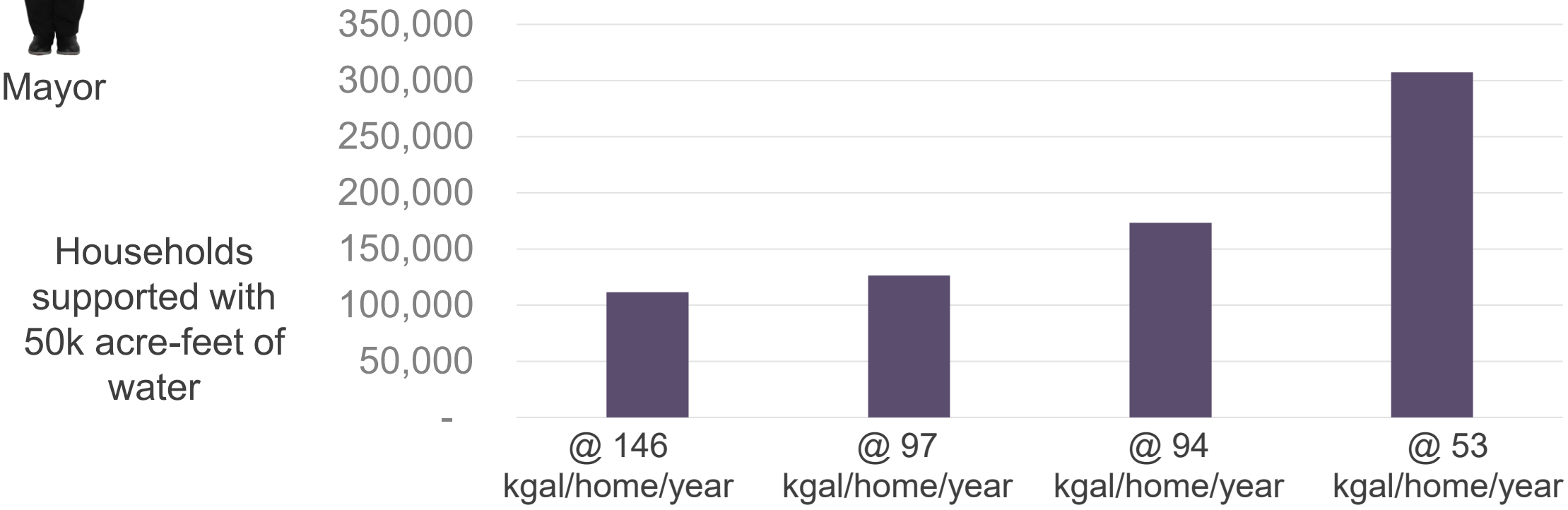
Well, we only have 50,000 acre-feet/year we can rely on...

That's great! Because we are going to grow this city by hundreds of thousands!!

But we only have 50,000 acre-feet!!!



Planner



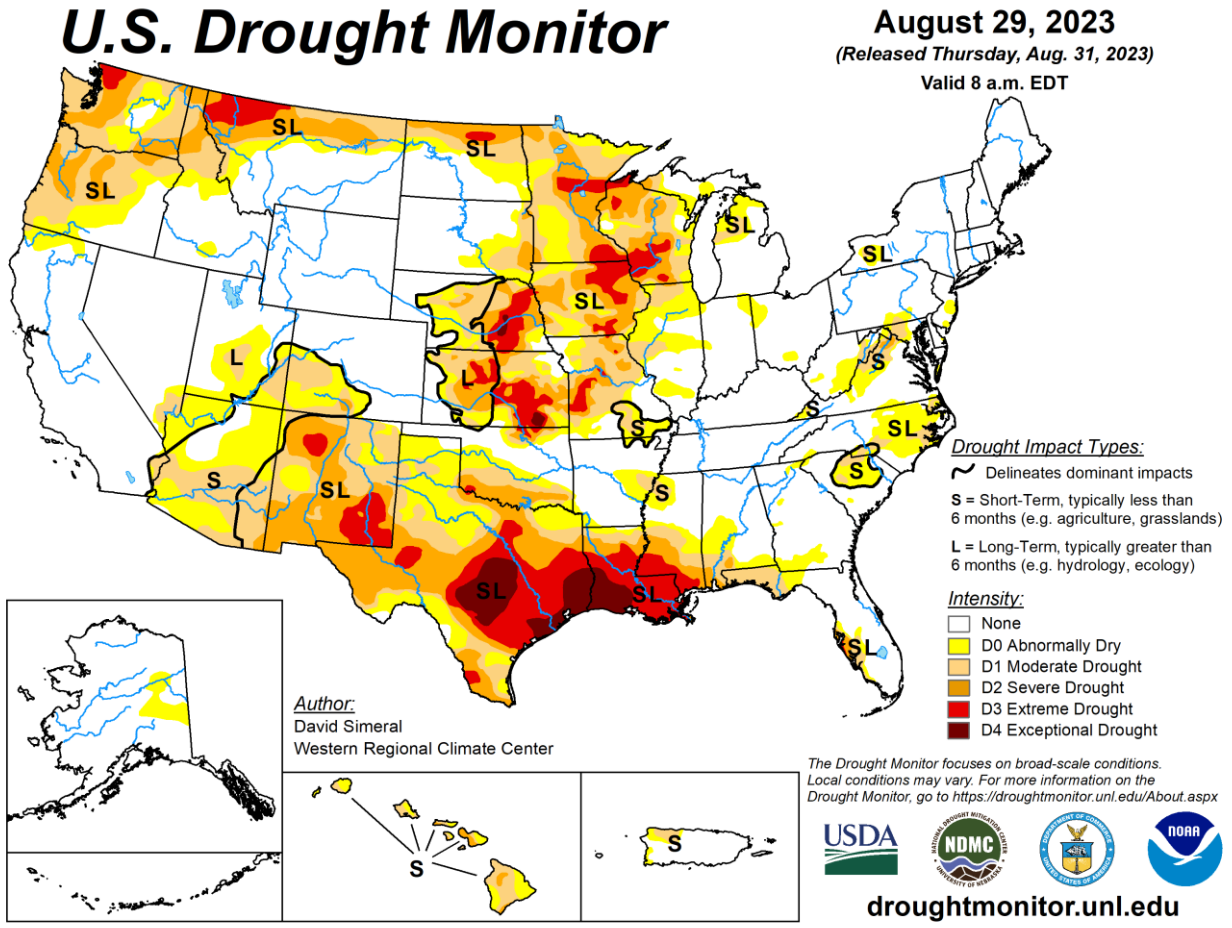
Crisis 1: Drought

West

- Governed by doctrine of “prior appropriation”
- Limited supply due to drought, aridification, climate, etc.
- Substantial community growth

This means:

- Limits to entitlements
- High connection fees



East

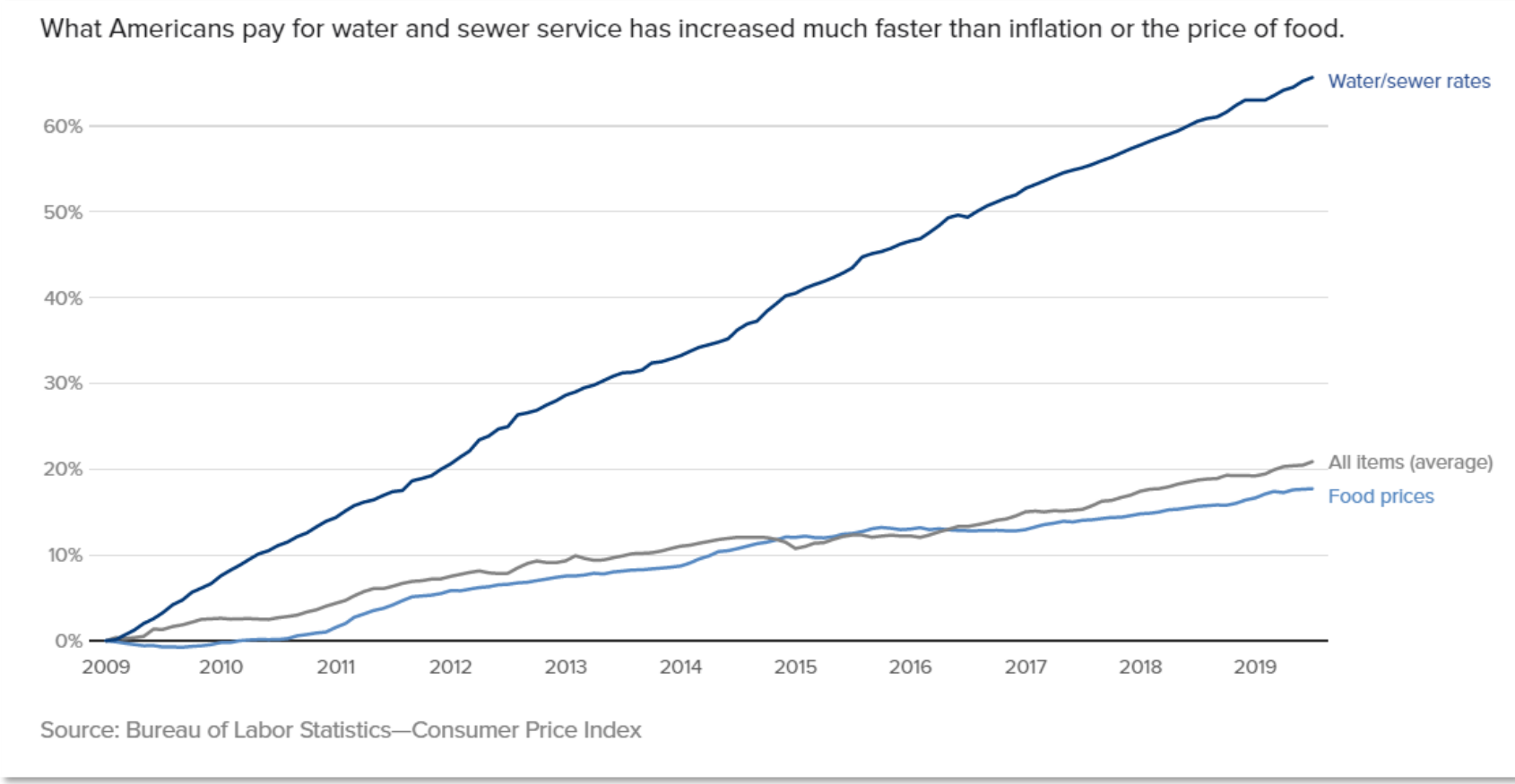
- Governed by “riparian rights” schemes
- Older infrastructure with substantial capital improvement needs
- High frequency of combined sewers

This means:

- Higher rates

Crisis 2: Infrastructure

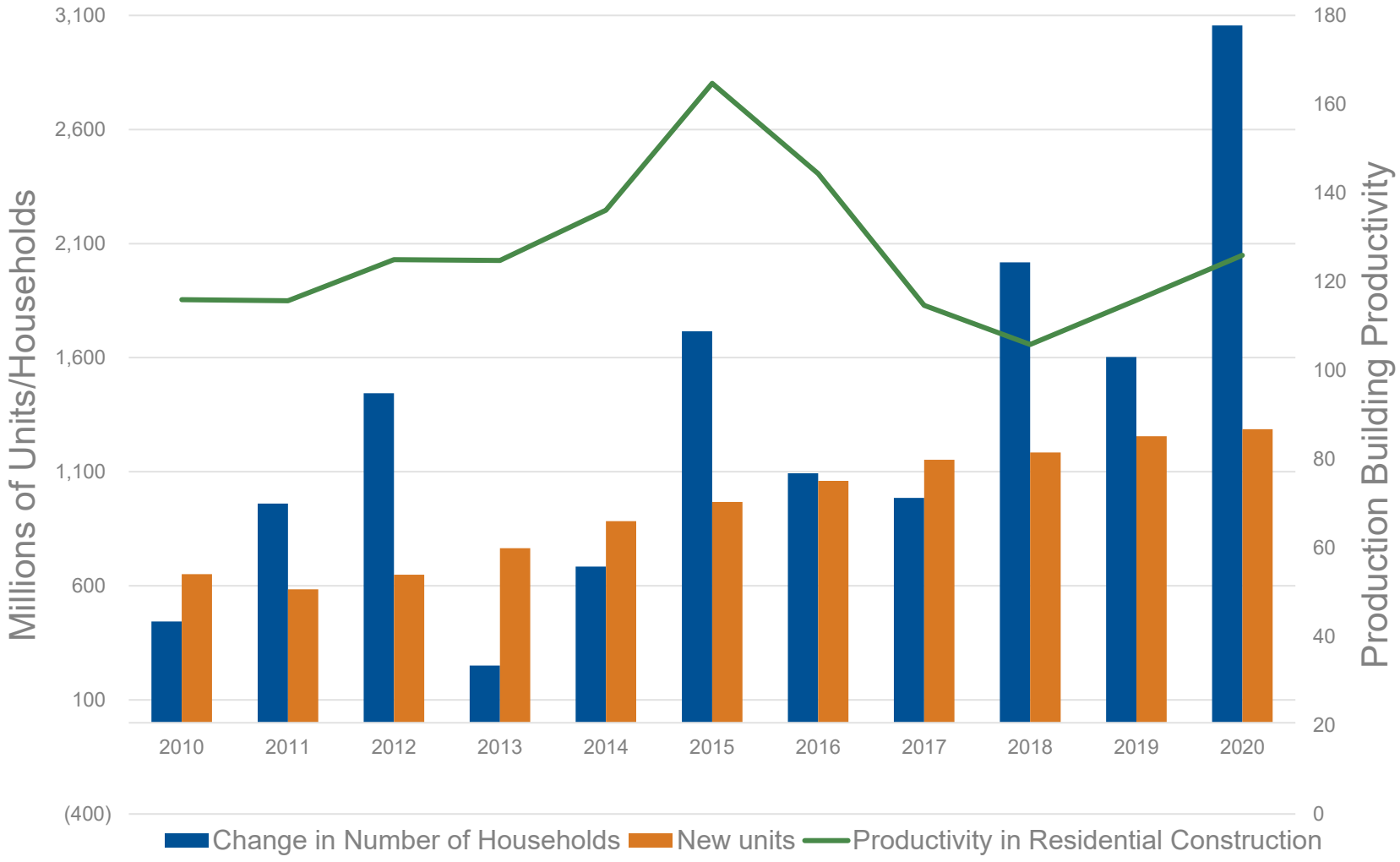
- Compliance & infrastructure costs
  - 12,000 miles of pipe were replaced in 2020 alone
- Operations
  - Utilities spent $50.2 billion above capital in 2017



This is before the added burden from drought, stress, and climate change!

Crisis 3: Housing

Between 2010 and 2020 the country added almost 4 millions more households than housing units



Productivity in residential construction has been relatively flat for decades

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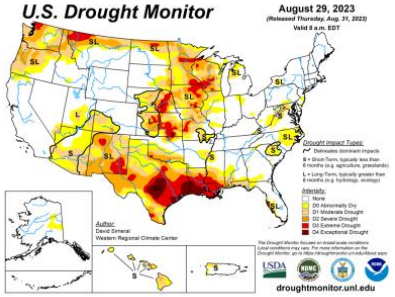

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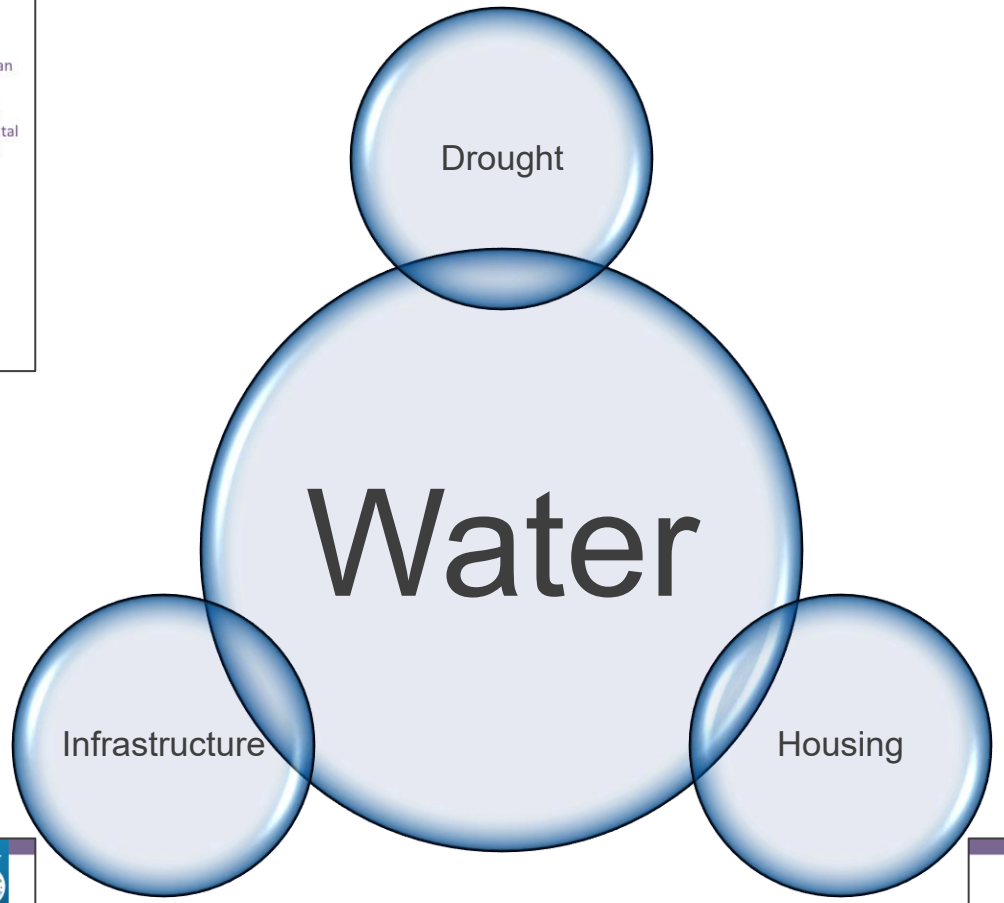

Water sits at the center of these crises!

Crisis 2: Infrastructure

- Compliance & infrastructure costs
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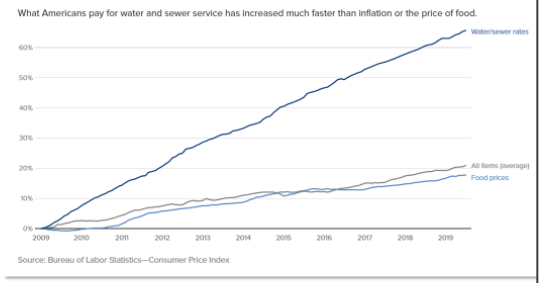

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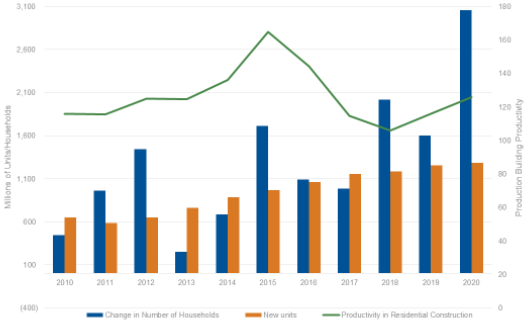


Productivity in residential construction has been relatively flat for decades

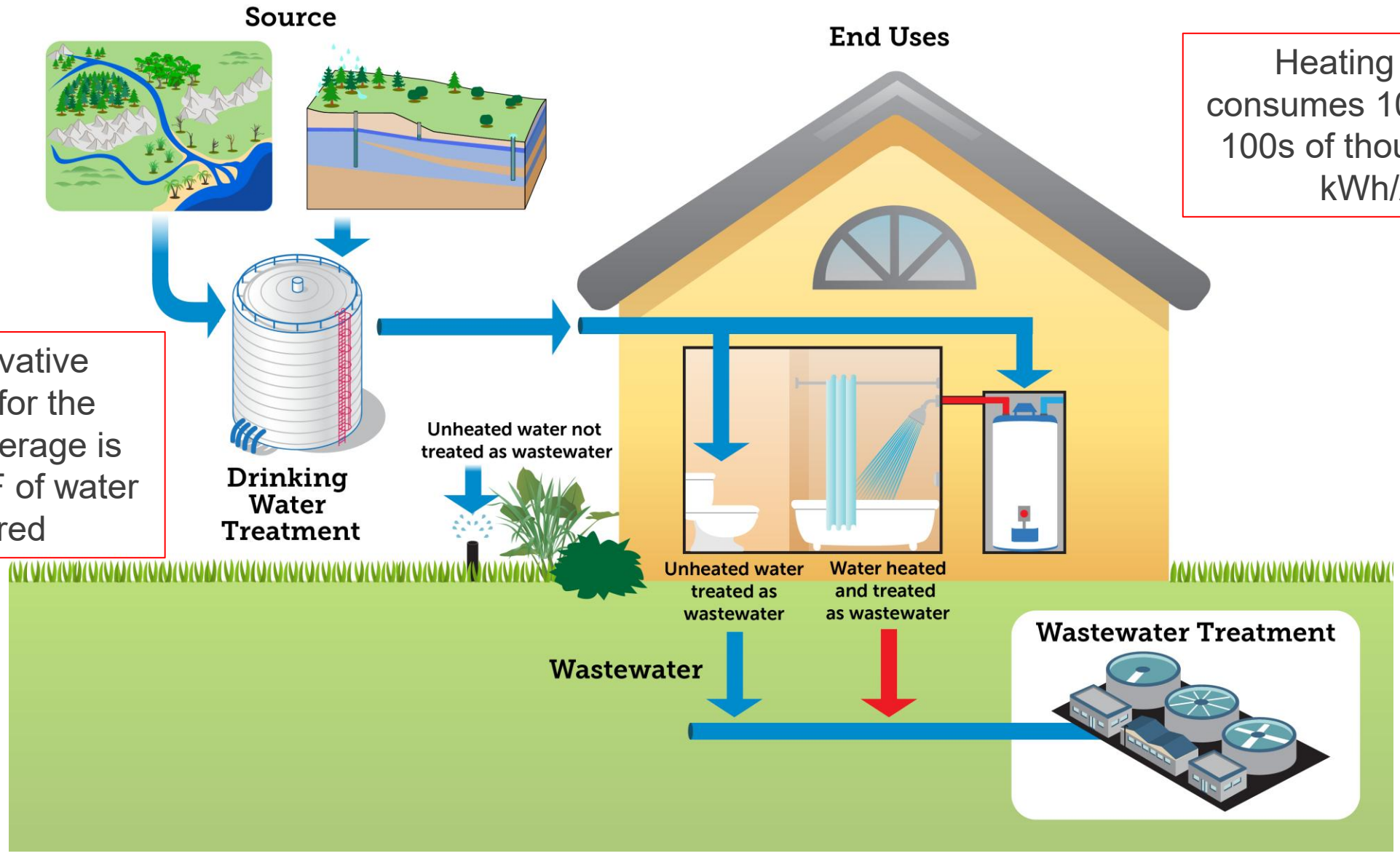
Benefits of WaterSense labeled homes for Communities

- Lots of savings, built in from the start
  - New construction/substantial renovation allows us to target maximum savings for smallest incremental cost
  - Savings are achieved throughout the life of the home
- Whole-house building science approach is more effective than product/specification/retrofits alone
  - A home's systems (plumbing, irrigation, etc.) don't lend themselves to product labeling
  - Provides a template for continued savings beyond product replacement
- Whole-house building science approach is more effective than product/specification/retrofits alone
  - Adaptive to climate and market considerations
  - Confidence and durability of savings is increased by onsite verification and quality assurance

Benefits of WaterSense labeled homes for builders/developers

- Added value to the homebuyer
  - Cost savings
  - Comfort
  - Quality
- Savings and performance with flexibility
- Water is an increasingly important part of the land entitlement process
  - Availability of water/service connections is frequently the deciding factor in a site's viability
- Disclosure and ESG reporting requirements
  - Being responsible stewards of water is an important part of the building industry's social license to operate AND often a prerequisite for investment
- Water has to be part of the decarbonization discussion

What Influences the Energy Profile of Water?



Heating water consumes 10s or even 100s of thousands of kWh/AF

A conservative estimate for the national average is 674 kWh/AF of water delivered

A conservative estimate for the national average is 800 kWh/AF of wastewater treated

Version 2.0 Requirements

Technical requirements for homes

- Meet all items on the mandatory checklist
- Meet an efficiency threshold of 30% below typical new construction (based on national norms)

Specification

Requirements for Home Certification Organizations (HCOs)

- Organizational requirements for oversight, quality assurance, training, reporting, and managing conflicts of interest

Certification System

- Technical evaluation of the proposes certification method
  - Will it effectively differentiate homes that save 30%

Technical Evaluation Process

Technical Requirements for V2

MANDATORY CHECKLIST FOR WATERSENSE LABELED HOMES

Item	Requirements	Confirmed
Leaks	Pressure-loss test on all water supplies detected no leaks	☐ Yes ☐ No
	Free of visible leaks from hot water delivery system	☐ 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
	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., 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

- Meet all items on the mandatory checklist
- Meet an efficiency target of 30% relative to standard new construction

How do I Measure 30%?

- EPA allows HCOs to develop their own method of measuring water use
  - EPA retains the role of reviewing/approving each HCO's method
  - This evaluation protocol is available on our website
- EPA has approved **Home Certification Organizations (HCOs)**
  - HCOs can use a different tool or approach to measure the 30% efficiency requirement.
  - EPA evaluates their method, as part of the application process, to reiterate that the tools are measuring water efficiency accurately.
  - Methods are then referred to as WACMs – WaterSense Approved Certification Methods
- Goal is to protect the integrity of the WaterSense Program and label ensuring certified homes meet the stated efficiency threshold regardless of the WACM used.

Flexibility with Consistency

- Minimal Mandatory Items prescriptive items
- Ability to use a performance-based, whole-house approach
  - For example, a WERS score of 66 or lower is needed for WaterSense certification
- Easy training for verifiers
  - Available through individual HCOs
- Ability to work with additional HCOs

CHEERS

GreenBuilder® COALITION

NGBS GREEN™
Home Innovation Research Labs

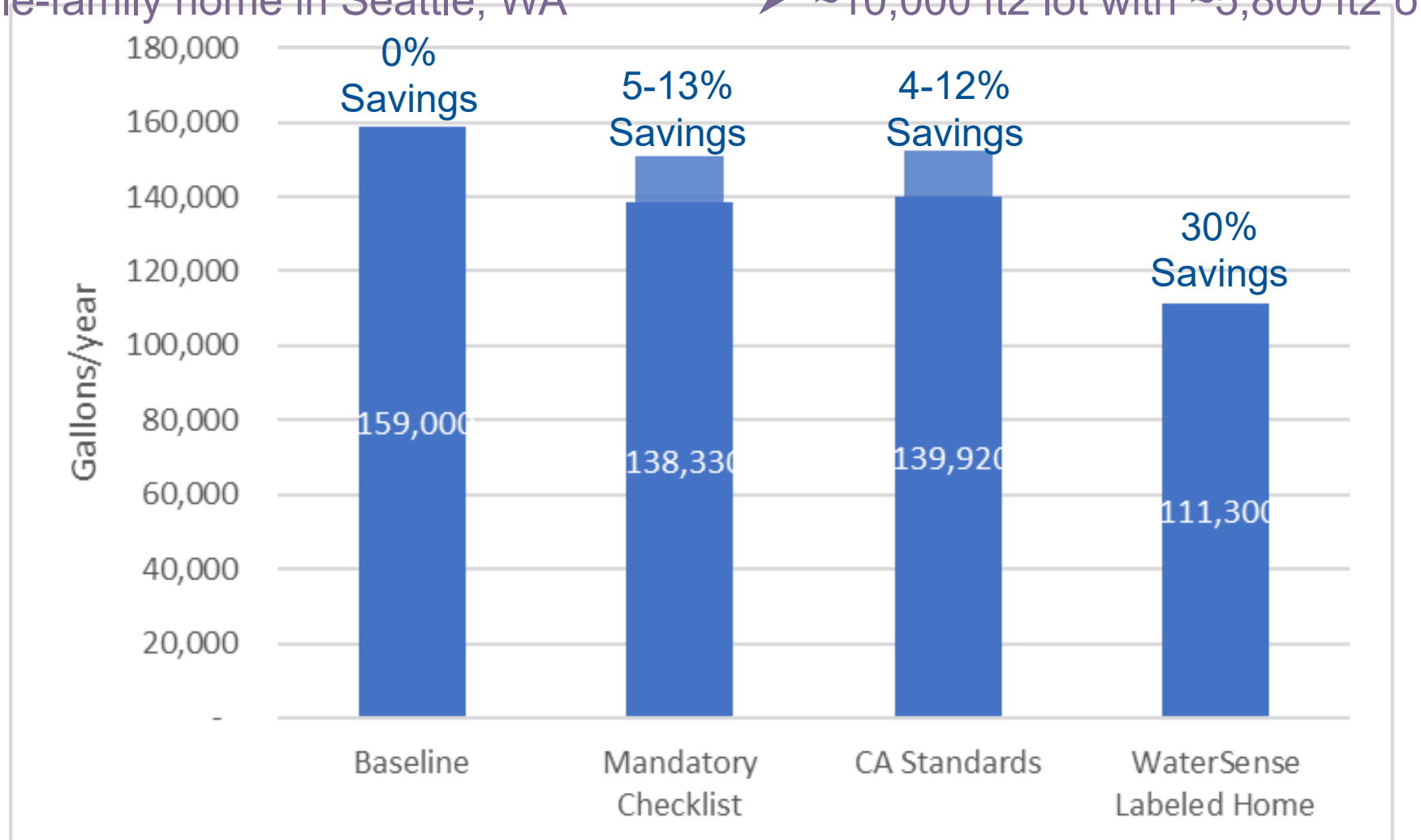
RESNET HERS H20

EPA Approved HCOs

HCO	SCOPE			METHOD FOR LABELING HOMES
	REGIONALITY	BUILDING TYPES	CONSTRUCTION TYPE	
CHEERS		Single-Family	New Construction	Achieve a score of 70 or less under CHEERS WaterSense
GreenBuilder COALITION		Single-Family	New & Existing Construction	Achieve a score of 66 or less under the Water Efficiency Rating Score (WERS) with WaterSense Baselines
NGBS GREEN Home Innovation Research Labs		Single-Family & Multifamily	New & Existing Construction	Complete a set of selected practices from the National Green Building Standard (NGBS)
			New Construction	Achieve a score of 64 or less under the Water Rating Index
RESNET HERS$_{H2O}$		Single-Family	New & Existing Construction	Achieve a score of 70 or less under HERS$_{H2O}$

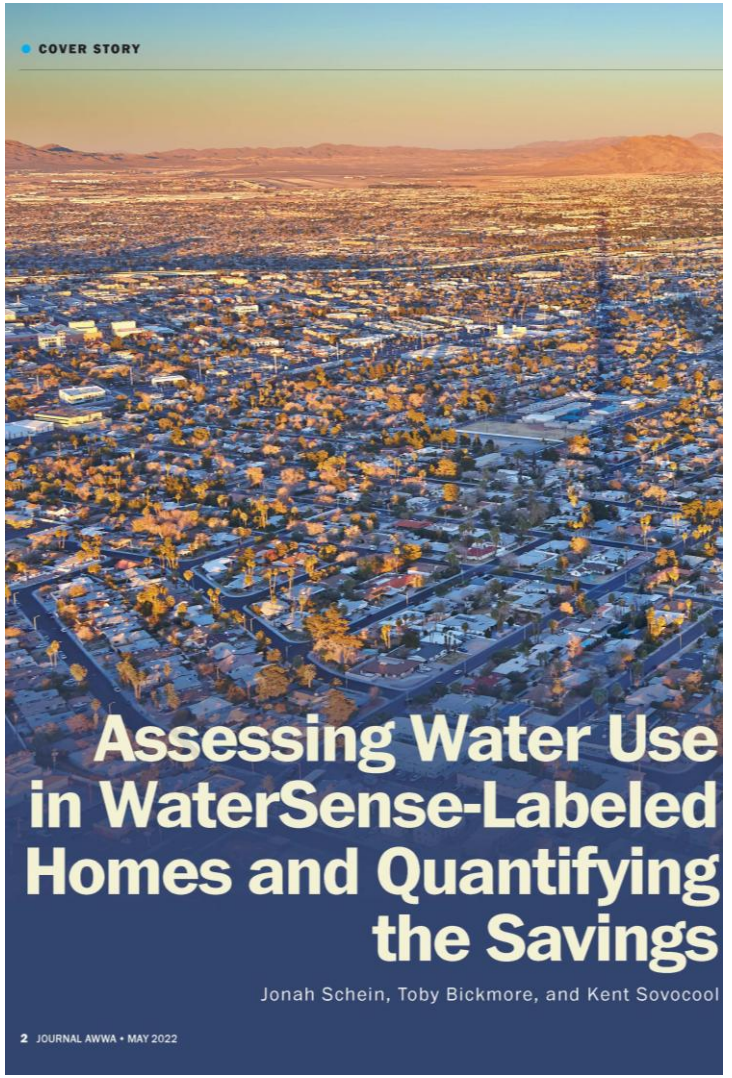
How Much Can We Save in Salt Lake?

- Assuming a statistically average home
- Single-family home in Seattle, WA
- 2.61 people per household
- ~10,000 ft2 lot with ~5,800 ft2 of landscaping



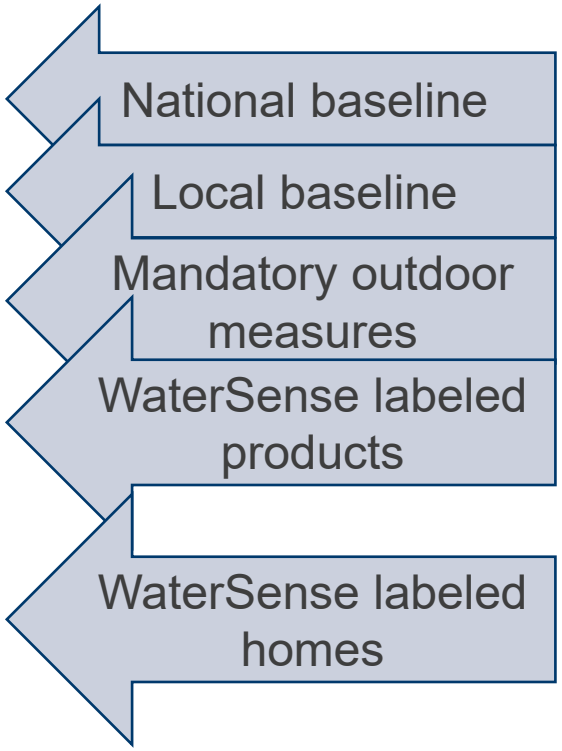
Las Vegas Pilot Study

- V2 was piloted in the Las Vegas region in the summer of 2020 following the sunset of Water Smart Homes
  - 568 homes were certified through the pilot project
- Metered water usage was collected from the retail utilities and paired with information gathered during the inspection/certification process
- Median use was 44 kgal/year (based on 160 WaterSense labeled homes) compared to 97 kgal/year in typical new construction in the area
  - At this rate roughly 7.5 homes/year can be supplied with an acre-foot of water compared to 3-4 homes/year typically seen in the West
- Full report available online

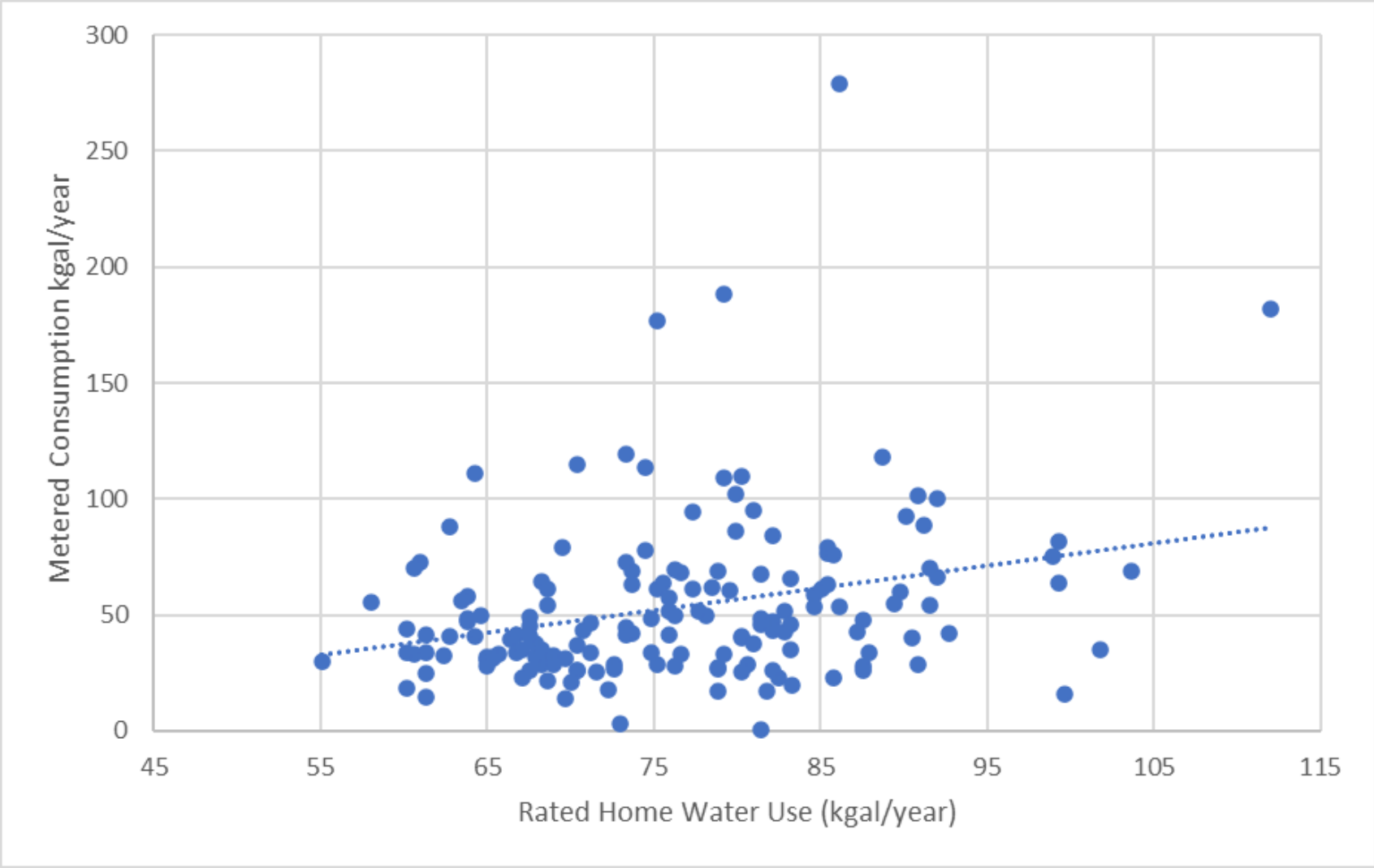


We Can Save More With the Whole-House Approach!

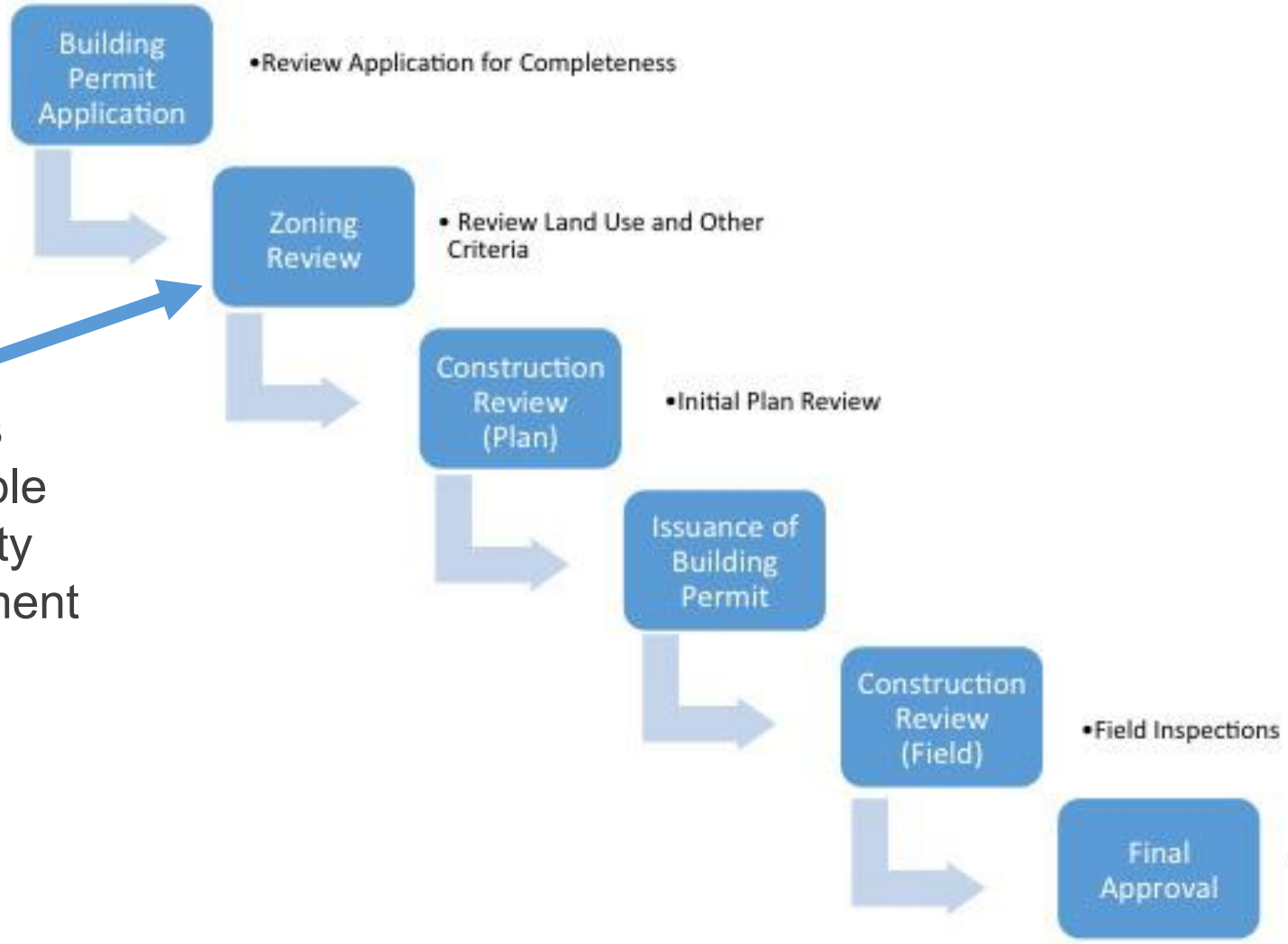
Source	Scope	Study population & period	Average Value (kgal/household/year)
Residential End Uses of Water Study	National	Stock housing monitored 2013-2014	146
SNWA	Las Vegas Area	New homes built 2000-2003	129
SNWA	Las Vegas Area	New homes built 2008-2009	97
SNWA	Las Vegas Area	New Water Smart Homes built 2008-2009	94
WaterSense Labeled Homes Study	Las Vegas Area	New WaterSense labeled homes built 2020-2021	53



Predictions vs. Reality



How are communities using the WaterSense labeled homes program?



Phoenix's Sustainable Desert City Development Policy

Central Arizona Project Groundwater Replenishment District Water-Efficient Construction Incentive

Get in touch…

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Web | https://www.epa.gov/watersense/homes
Email | watersense@epa.gov
Phone | (866) WTR-SENS (987-7367)

HCO Factsheets

look for WaterSense Meets EPA Criteria

WaterSense Labeled Homes Program

Home Certification Organization: RESNET

The U.S. Environmental Protection Agency's (EPA) WaterSense® program works with Home Certification Organizations (HCOs) to certify and issue the WaterSense label to homes that meet EPA's criteria for both water efficiency and performance.

What's in a WaterSense Labeled Home?

All WaterSense labeled homes are independently certified to meet EPA's Mandatory Checklist and be at least 30 percent more water-efficient than a typical new home.

MANDATORY CHECKLIST TO ENSURE QUALITY PERFORMANCE

LEAKS

- ◯ Pressure-loss test on all water supplies detects no leaks
- ◯ Free of visible leaks from all fixtures and appliances at point of use or point of connection to water distribution system
  - ◯ Toilets
  - ◯ Bathroom faucets
  - ◯ Showerheads
  - ◯ Bathroom tub faucets, i.e., tub spouts
  - ◯ Kitchen and other sink faucets
  - ◯ Other fixtures or appliances (e.g., water heaters, clothes washers, dishwashers)

WATERSENSE LABELED PLUMBING FIXTURES

- ◯ Toilets
- ◯ Bathroom sink faucets
- ◯ Showerheads

EFFICIENCY REQUIREMENT

VERIFIED EFFICIENCY

- ◯ At least **30 percent** more water-efficient than a typical new home (based on national standards and common design and landscape practices).

What is a Home Certification Organization's Role in Labeling Homes for WaterSense?

Within the WaterSense Labeled Homes Program, HCOs are responsible for quality assurance, verifier training and oversight, home verification protocols, and reporting. HCOs also maintain their own certification method (reviewed and approved by EPA) to evaluate a home's water efficiency and determine whether it meets EPA's efficiency requirement. This **WaterSense Approved Certification Method (WACM)** can include features such as water-efficient fixtures, appliances, and systems (e.g., irrigation and hot water delivery) that builders can include in homes to meet the efficiency requirement. Keep reading to learn more.

How Builders Can Get Involved:
Are you a builder ready to get started? Partner with WaterSense and visit www.epa.gov/watersense/watersense-labeled-homes to learn more.

HCO Profile: RESNET

RESNET is a national non-profit organization founded in 1995. RESNET develops standards for the certification and oversight of home energy and water ratings and the certification of individuals who conduct those ratings. With its network of more than 2,500 active and [illegible] Raters and Rating Field Inspectors, RESNET has a footprint i[illegible] software used to complete ratings and a network of quality as[illegible] oversight of energy and water ratings.

Method for Labeling Homes: $HERS_{H2O}$

RESNET uses $HERS_{H2O}$ for WaterSense certification. $HERS_{H2O}$ is based on the nationally accredited standard ANSI/RESNET/ICC 850. To earn the WaterSense label through $HERS_{H2O}$, a home must achieve a score of 70 or less and adhere to the items on WaterSense's Mandatory Checklist. Since $HERS_{H2O}$ is a performance-based program, builders can use any combination of indoor and outdoor water efficiency measures to achieve the target score.

Alignment With Other Certification Programs

$HERS_{H2O}$ was designed to be easily added to a HERS rating. HERS Raters and Rating Field Inspectors who have been trained and authorized as WaterSense Home Verifiers only need to complete a few additional testing and inspection requirements during their final HERS inspection in order to issue a $HERS_{H2O}$ rating and verify that a home has earned the WaterSense label. This process makes it easy for builders to use one Rater to obtain HERS and $HERS_{H2O}$ ratings, the WaterSense label, and ENERGY STAR® certification.

For more information about RESNET, visit:

HCO Profile: CHEERS

As California's largest Home Energy Rating System (HERS) Provider, CHEERS operates the central data verification platform where building industry professionals register projects for California energy code (Title 24), state, and federal efficiency program compliance. From single-employee shops to the nation's largest builders, more than 60,000 registered users utilize CHEERS to implement California energy and water efficiency programs.

Method for Labeling Homes: CHEERS WaterSense

CHEERS WaterSense is a system for rating whole-house water efficiency that includes both indoor and outdoor water uses. It is a performance-based program that requires a score of 70 or lower to earn the WaterSense label.

Alignment With Other Certification Programs

As a California Energy Commission approved HERS Provider and EPA ENERGY STAR® Partner, CHEERS' addition of WaterSense is a natural complement to CHEERS HERS Raters, who serve energy and water efficiency-minded builders.

For more information about CHEERS, visit

HCO Profile: Home Innovation Research Labs

Home Innovation Research Labs is an internationally recognized, third-party product testing and certification laboratory. Their work is solely focused on the residential construction industry, with a mission to improve the affordability, performance, and durability of housing. Home Innovation leverages its deep residential expertise and experience in its administration of green certification programs for residential construction. Home Innovation serves as certification body for the ICC-700 National Green Building Standard (NGBS), a Multifamily Review Organization (MRO) for EPA's ENERGY STAR® Multifamily New Construction Program, and an HCO for the WaterSense Labeled Homes Program.

Method for Labeling Homes: NGBS Green with WaterSense

There are two compliance pathways based on selected practices from the 2020 NGBS:

(1) **Prescriptive** – Implement selected practices from NGBS Chapter 8 or 11, including installing efficient plumbing fixtures, appliances, hot water distribution, and irrigation systems.

(2) **Performance** – Demonstrate overall water performance by earning a Water Rating Index(WRI) score of 64 or lower. A WRI score is a value between 0 and 100 that indicates a property's total indoor and outdoor water use compared to a baseline based on the home's size and basic configurations.

Alignment With Other Certification Programs

Home Innovation's WaterSense compliance methods are based on selected practices from the 2020 NGBS.

Achievement of WaterSense certification under either pathway nearly satisfies the water efficiency requirements for NGBS Green Certification. Dual certification to NGBS Green and WaterSense offers NGBS Green Partners added marketing benefit through a streamlined dual-certification process.

For more information about Home Innov[illegible]
www.HomeInnovation.com/Wate[illegible]

HCO Profile: Green Builder® Coalition

The Green Builder Coalition is a non-profit membership organization for green building professionals that provides its members with information and advocacy resources. The Green Builder Coalition also owns the Water Efficiency Rating Score (WERS®) Program.

Method for Labeling Homes: Water Efficiency Rating Score (WERS) With WaterSense Baselines

WERS is a performance-based water efficiency program for both new and existing residential properties that preserves design freedom and product choice flexibility. Third-party analysis and data collection is utilized to generate a score and predict water usage. An eligible property must meet the WaterSense prescriptive requirements and achieve a WERS of 66 or less using WaterSense baselines.

Scope

WERS is available in the United States and Canada but can be utilized anywhere in the world. WERS for WaterSense is currently only applicable to single-family properties in the United States.

Builders cannot use the capture and reuse function of WERS to earn the WaterSense label. While it does not contribute towards WaterSense certification at this time, WERS can accommodate any form of capture and reuse, including rainwater, graywater, blackwater, and stormwater.

Alignment With Other Certification Programs

WERS is an alternative compliance path in the following green building programs:

- Built Green Canada
- Austin Energy's Green Building Program
- Built Green Washington

WERS is also the basis for the Water Rating Index (WRI) found within the National Green Building Standard.

Information for Verifiers

Training is available for those who wish to become WERS Verifiers. The verifier course includes both classroom and field training, along with a written and field exam.

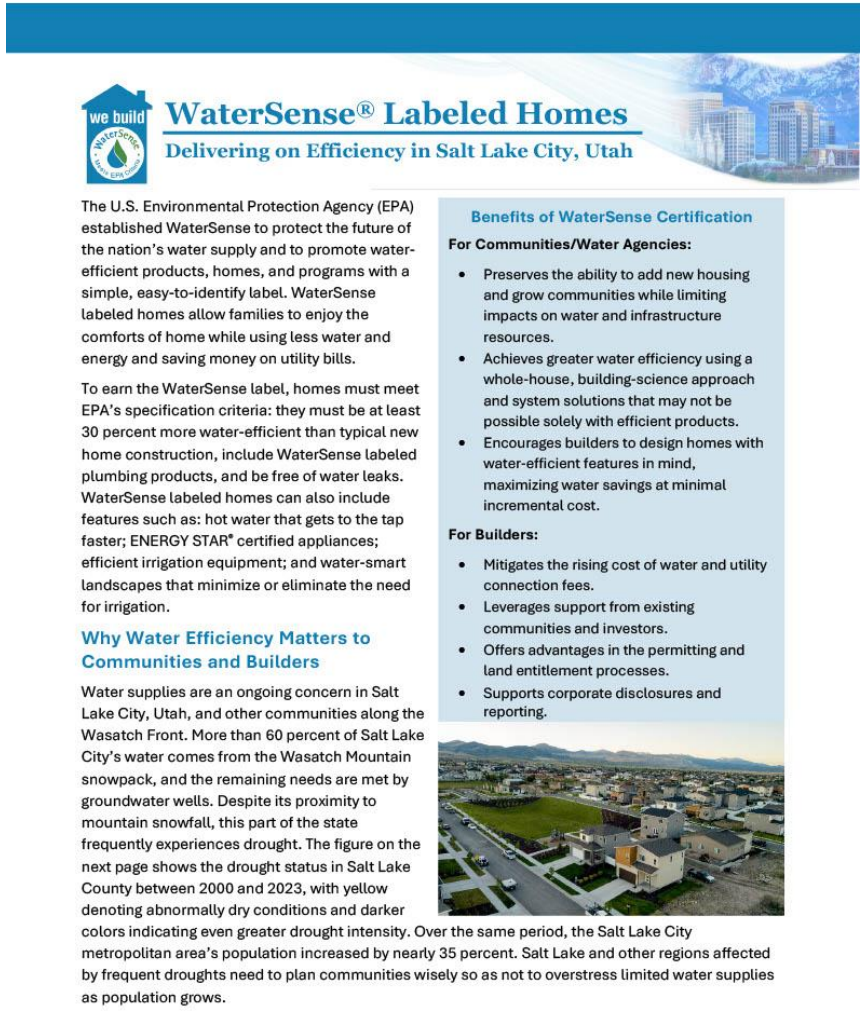
Online and in-person training is offered. To register for the online course, please visit https://certifiedratingsprogram.thinkific.com/courses/WERS-Verifier-Course

For in-person training options, please contact Laureen at lb@greenbuildercoalition.org. Minimum class size is 5 and maximum class size is 12.

For more information about Green Builder Coalition, visit:
www.wers.us.

EPA
EPA-832-F-22-XXXX
SEPTEMBER 2022

Regional Factsheets



we build

WaterSense® Labeled Homes

Delivering on Efficiency in Salt Lake City, Utah

The U.S. Environmental Protection Agency (EPA) established WaterSense to protect the future of the nation's water supply and to promote water-efficient products, homes, and programs with a simple, easy-to-identify label. WaterSense labeled homes allow families to enjoy the comforts of home while using less water and energy and saving money on utility bills.

To earn the WaterSense label, homes must meet EPA's specification criteria: they must be at least 30 percent more water-efficient than typical new home construction, include WaterSense labeled plumbing products, and be free of water leaks. WaterSense labeled homes can also include features such as: hot water that gets to the tap faster; ENERGY STAR® certified appliances; efficient irrigation equipment; and water-smart landscapes that minimize or eliminate the need for irrigation.

Why Water Efficiency Matters to Communities and Builders

Water supplies are an ongoing concern in Salt Lake City, Utah, and other communities along the Wasatch Front. More than 60 percent of Salt Lake City's water comes from the Wasatch Mountain snowpack, and the remaining needs are met by groundwater wells. Despite its proximity to mountain snowfall, this part of the state frequently experiences drought. The figure on the next page shows the drought status in Salt Lake County between 2000 and 2023, with yellow denoting abnormally dry conditions and darker colors indicating even greater drought intensity. Over the same period, the Salt Lake City metropolitan area's population increased by nearly 35 percent. Salt Lake and other regions affected by frequent droughts need to plan communities wisely so as not to overstress limited water supplies as population grows.

Benefits of WaterSense Certification

For Communities/Water Agencies:

- Preserves the ability to add new housing and grow communities while limiting impacts on water and infrastructure resources.
- Achieves greater water efficiency using a whole-house, building-science approach and system solutions that may not be possible solely with efficient products.
- Encourages builders to design homes with water-efficient features in mind, maximizing water savings at minimal incremental cost.

For Builders:

- Mitigates the rising cost of water and utility connection fees.
- Leverages support from existing communities and investors.
- Offers advantages in the permitting and land entitlement processes.
- Supports corporate disclosures and reporting.

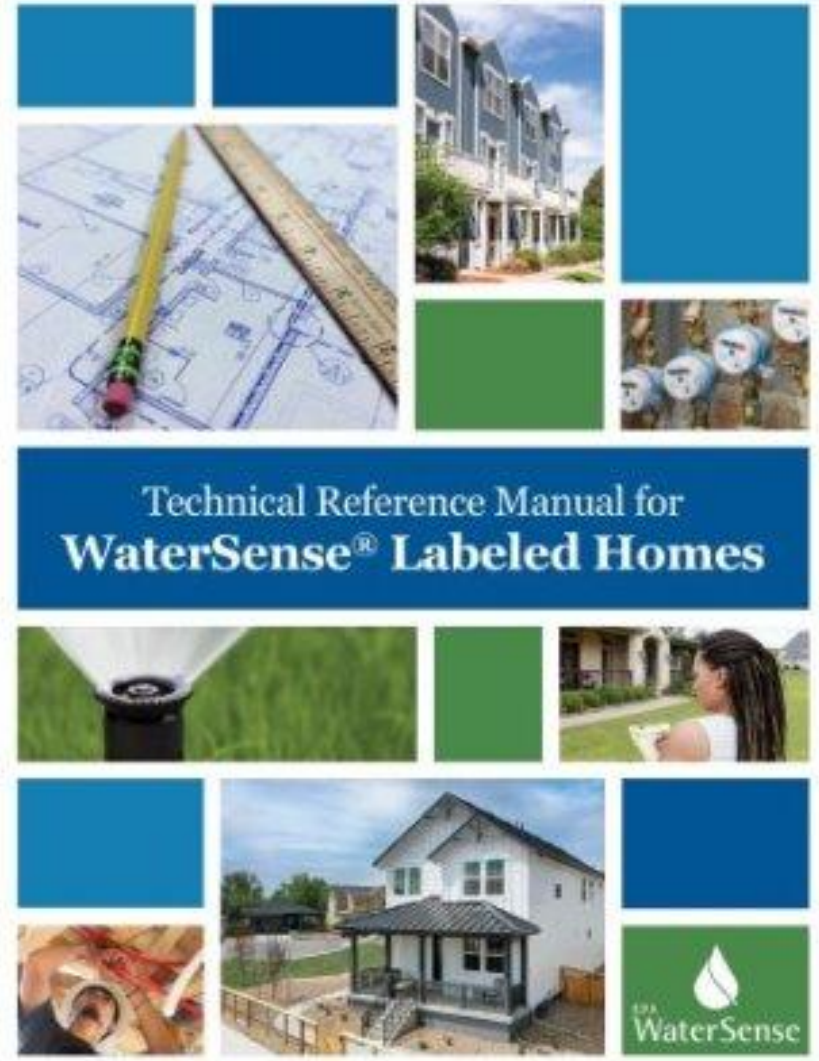
1

Available for:

- Charlotte, North Carolina
- Denver, Colorado
- Las Vegas, Nevada
- Orlando, Florida
- Phoenix, Arizona
- Sacramento, California
- Salt Lake City, Utah
- San Antonio, Texas
- San Diego, California
- Santa Fe, New Mexico

Introductory Guide

Technical Reference Manual



What Are Water Ratings?

Mike Collignon

Exec. Dir., Green Builder® Coalition
Chair, WERS Development Group
Co-Founder, Next Generation Water Summit

Water Ratings

Water ratings are on-site analyses of single-family & multifamily properties that subsequently forecast future water usage.

Ratings do not mandate anything;
they simply assess the design & materials of the property.

- Codes/regulations
- Financial Incentives
  - Tax Credits
  - Rebate Programs
- Green Building Programs
  - Alternative path for water efficiency

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

Water Ratings can include:

- Indoor
  - Fixtures
  - Appliances
  - Structural Waste
  - Water Softeners
  - R/O Systems
  - Recirc Systems
  - Pipe diameter/type
  - TSVs
  - Spas
  - Bidets/Urinals
  - Graywater Systems
  - Blackwater Systems
  - Etc.
- Outdoor
  - Irrigation Systems (all)
  - Landscape/Vegetation (all)
  - Pools & Spas (Covered and Uncovered)
  - Rainwater Harvesting Systems
  - Roof type/slope
  - Sitewater Capture and Reuse
  - Hardscape type/slope
  - Soil type/slope
  - ETo & Annual Rainfall data supplied by IWMI (via the EPA)
  - Optional input from other outdoor water budgeting tools
  - Etc.

Water Rating outputs can include:

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

Rating Report

Combined Use and Conservation Summary

AVERAGE CONSERVATION BASELINE VS. RATING

	DAY	MONTH	YEAR	CPD
GALLONS USED PER:	743	22,343	160,916	186
GALLONS SAVED PER:	2,143	64,337	400,437	536
WITHOUT REUSE CREDITS				
SAVINGS PER:	$34.84	$1,045.40	$6,376.20	$8.71
WITH REUSE CREDITS				
SAVINGS PER:	$38.48	$1,154.87	$7,199.57	$9.62

Estimated Costs

BASED ON RATING REPORT RESULTS

	DAY	MONTH	YEAR	CPD
WITHOUT REUSE CREDITS				
EST. COSTS PER:	$12.29	$369.50	$2,532.52	$3.07
WITH REUSE CREDITS				
EST. COSTS PER:	$8.66	$260.03	$1,709.15	$2.16

WERS 29 NO REUSE CREDITS

PRELIMINARY

UNCONFIRMED AND UNCERTIFIED

17 WITH WATER REUSE CREDITS

The WERS is based on the total water use requirements of the proposed design in comparison to an established baseline.For indoor, the baseline is primarily the EPA Water Act of 1992 for the standard plumbing fixtures. For outdoor, the baseline is a specialized calculation derived from an ASABE standard.

Construction Report

Water Efficiency Rating Score (WERS)®

CONSTRUCTION SPECIFICATIONS FINAL REPORT

Builder
Scott Wong of Solterra + Design

Verification
Nick Arvidson of Evergreen Building Solutions

Project
Redacted

Report Date: 8/10/2023

This report is for: NEW CONSTRUCTION RATING: Final

- Please complete the information in the white boxes.
- Orange boxes are pulldowns that require a response.
- Purple boxes, blue boxes, and grey boxes need no action.
- Cells with a small red triangle have additional guidance provided in a "flip-out" box.

BR1 BUILDING SUMMARY

Please refresh reports before printing to reflect changes made elsewhere.

Project Type	NEW	Single Home	FINAL

Stormwater Calculations and Site Specifications

Lot Size (sf)	115,415.00	Impervious Areas (sf)	5,149.00
Encroachments (sf)	16,251.00	Pervious Water Use/Planted Areas (sf)	10,034.00
Other Structure FPs (sf)	288.00	Pervious Non-Water Use Areas (sf)	3,153.00
Remaining Lot (sf)	93,942.00	Impervious Percentage	4.46%

Green Building Certification Information

		type		
Directed Impervious Surface(s) (sf)	0.00	NONE	Rain Gardens planned?	No
Directed Pervious Surface(s) (sf)	0.00	NONE	Food Gardens planned?	No
Total Pervious	13,187.00			

Peak Month	jun	Peak EtO	9.23	Peak Rainfall	0.81043

IU1 Indoor Fixtures and Appliances

Construction Report

IU1 Indoor Fixtures and Appliances

	Fixture or Appliance	Field Verified Parameters to Generate WERS	Final Notes
A	Toilet (GPF) Using verfied 1.28	1.28	-
B1	Showerhead (GPM) Using verfied 2.25	2.25	-
B2	Bathtub (GPU)		-
C	Lavatory (GPM) Using verfied 1.265	1.27	-
D	Sink (GPM) Using verfied 1.64	1.64	-
E	Dishwasher (GPC) Using verfied 3.2	3.20	-
G	Water used to reach 100 degrees (GPU WERS estimated)	0.44	-
	Separate Master Tub?	Y	-
	HW Recirc System?	Y	-
	TSV Installed ON SHOWER HEADS?	N	-
	TSV on tub spout	N	-
	Primary Piping Type	PEX	-

IU3 Other Indoor Water Features and Equipment

			Final Verified Units		
Item	Description	Manufacturer / Model #	Present or Qty	GPD	Extended
1	-	-	0	0.00	0.00
3	-	-	0	0.00	0.00

Outdoor Water Use | Capture and Usage | **CONSTRUCTION REPORT** | RATING REPORT | VERIFICAT

Construction Report

Capture and Usage Summary: CU1 & CU2 Water Capture

Capture and Usage Summary: **CU3 Water Re-Use**

Minimum Tank(s)	*Specified Tank(s)*	*Catchment or DI*

Outdoor Use and Conservation Summary

Project is using tool for calculations

N	Rain Interruption Device?	N	Smart Controller?	No	Irrigation System?

Total Area	10034.00	Landscape / Water Requirement for Site (G)	27774.62	2.77(G/SF)

Notes

BR2 BUILDING REPORT AFFIDAVIT

Project cannot qualify for WaterSense 2.0 at this time

REPORT Signature Section

AS THE ACCREDITED WERS VERIFIER, I AFFIRM THAT AT THE TIME OF THE FINAL WERS ALL OF THE PERTINENT DOCUMENTATION HAD BEEN PROVIDED TO ME AND THE FINAL DESIGN CONDITION HAS BEEN FIELD VERIFIED BY ME. THE ACCURACY OF THE PERTINENT DOCUMENTATION IS THE RESPONSIBILITY OF THE DOCUMENT PROVIDER AND THE VERFIER HAS NO CONTROL OF THE WERS STATUS OF THE PROPERTY AFTER CERTIFICATION.

Yes

Bonus Tools

- Tank sizing
- Irrigation Design
- Fixture Modeling
- Water Audits

Data, Data, and more Data…

WERS Timeline

- 2013 – Santa Fe brainstorming session produces concept of residential water rating
- 2014 – WERS Development Group is formed
- 2015 – 1st pilot project
- 2016 – 1st WERS Verifier course held
- 2017 – Cited in NM tax credit; Santa Fe's single-family residential green code; partnered with Triconic/UL-Environment/Intertek for global capabilities
- 2018 – Allowed as code compliance path for multifamily in Santa Barbara, CA; WERS Consultant designation created
- 2019 – Incorporated a WERS Tool self-QC check and metric units for the international market

WERS Timeline (cont.)

- 2020 – Incorporated into Built Green Canada and Austin Energy Green Building Program; generic version (WRI) added to NGBS
- 2021 – Added to Vermont energy code as points-earning option; Built Green (WA) for single-family and multifamily compliance paths
- 2022 – Incorporated into EPA WaterSense for Homes 2.0 (single-family)
- 2024* – Added to Santa Fe RGBC for multifamily (65) and single-family requirement lowered to 65
- Total software updates (as of June 1, 2023): 20

*anticipated

No Water, No Growth

Questions? Contact Us!

info@greenbuildercoalition.org

Thank you!

www.wers.us

Coalition Programming

Urban Land Institute

Programming Brainstorm

Let us know what you want for coalition meetings!

Cohort Programming Agenda	Subject Brainstorm
Oct/Nov/Dec 2023	Presentations on landscaping codes and templates (WaterNow, Northern Water, Denver Botanic Gardens, CSU, Lisa Pace, other states?, Mike Diamond)
Jan/Feb/March 2024	Water wise policies, regulations, incentives (Waverly, AWE, Babbitt)
April/May/June 2024	Water pricing, tap fees, equity, and affordability (Benji Smith, AWE, WRA, CSU)
July/Aug/Sept 2024	One Water Approach + land use (US Water Alliance, Denver One Water, Tucson)
Oct/Nov/Dec 2024	Water reuse (Water Reuse Foundation, Pacific Institute)
Jan/Feb/March 2025	MLS listings? (adding water, energy, resilience scores), Appraisals?

BABBITT CENTER
FOR LAND AND WATER POLICY
A Center of the Lincoln Institute of Land Policy

SONORAN
INSTITUTE

Growing Water Smart is a Training & Assistance program that empowers local leaders to implement plans and policies that support community and regional water resilience.

Cross-Sector

Land Use Planners | **Water Managers** | **Local Officials**

Workshop Process:

- **Develop an Interdisciplinary Team**
- **Assess Current Conditions**
- **Set Goals**
- **Identify Opportunities**
- **Develop a Water-Smart Message**
- **Establish an Action Plan**
- **Implement**

Now accepting applications to Arizona Growing Water Smart:

- January 22-24, 2024
- Phoenix, Arizona
- Apps due Oct. 6, 2023

For more info or to apply:
resilientwest.org/growing-water-smart/arizona

Or email:
growingwatersmart@sonoraninstitute.org

Save the Date!

Appraisal Institute Webinar

Water-Wise Appraisals: Valuing Water in Real Estate Appraisals

Nov. 16, 1-4pm EST

Agenda:

- Welcome and introductions
- Julie Wilson-McNerney, Of Counsel, Schwabe, Williamson & Wyatt, on **water law**
- Peter Raabe, Southeast Regional Director, American Rivers, on the **local context of water**
- Marianne Eppig, Director, Resilience, Urban Land Institute, on **water-wise development practices**
- Jeffrey Friedlander, Senior Vice President, Clarion Partners, on the **return on investment of water-wise development practices**
- Timothy Runde, President, Runde & Partners, Inc., on **appraisals of water-wise development**
- Full panel discussion and Q&A with the audience
- Wrap up and announcements

Urban Land Institute

Implementation Project Ideas

Pending funding

- **A Water Wise Development Symposium** bringing together the public and private sectors to advance water wise strategies for real estate.
- **Convening local roundtables** and/or focus groups between public and private sector land use and water professionals, aimed at supporting water-wise real estate and supportive policies.
- **The creation of educational materials** that advance and document market demand for water-wise land uses.
- **Other ideas?**
  - Tours
  - Case studies with financials
  - Etc.

THANK YOU FOR JOINING US!

You can reach me at Marianne.Eppig@uli.org

Urban Land Institute