

This presentation premiered at WaterSmart Innovations

watersmartinnovations.com





Water Efficiency Rating Score

Green Builder® Coalition
October 6, 2016

WaterSmart

Presenter: Doug Pushard

The Green Builder[®] Coalition

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



Why Is Water Efficiency Necessary?



Oases in the desert?



No Water, No Growth



WERS is a predictive tool that can assist builders, municipal planners & utilities in their pursuit of growth and economic security

What is the Water Efficiency Rating Score?



New/Existing



Multi-Family



3rd Party

I/U1 Indoor Fixtures and Appliances										
Fixture or Appliance	Industry Standard (GPM/CFU/Day)	Proposed (GPM/CFU/Day)	Application to Proposed	Water Savings (GPM/CFU/Day)	Water Savings (%)	Water Savings (Gallons/Day)	Water Savings (Gallons/Year)	Water Savings (Gallons/Year)	Water Savings (Gallons/Year)	Notes
A Toilet (GPF)	1.6	1.6		0.0	0.0%	0.0	0.0	0.0	0.0	
B Showerhead (GPM)	2.5	2.5		0.0	0.0%	0.0	0.0	0.0	0.0	
C Lavatory (GPM)	1.5	1.5		0.0	0.0%	0.0	0.0	0.0	0.0	
D Kitchen Faucet (GPM)	1.5	1.5		0.0	0.0%	0.0	0.0	0.0	0.0	
E Dishwasher (GPM)	6.0	6.0		0.0	0.0%	0.0	0.0	0.0	0.0	
F1 Washer (GPM)	6.0	6.0		0.0	0.0%	0.0	0.0	0.0	0.0	
F2 Water used to reach 100 degrees (GPM)	4.21	0.30		3.91	92.8%	1.38	18.42	67.88%	22.88%	
G1 Faucet Water (L/s)	Y									
G2 Floor Sinks (L/s)	N									
G3 Toilets (L/s)	N									
H Indoor Water Features (Gallons/Day)	N									
SUMMARY AND CREDITS FOR RATED OR PROPOSED USES WILL APPEAR ONLY AFTER THE INDOOR USE AND THE CAPTURE & USAGE ARE COMPLETE.										
EXISTING INDOOR WERS SUBTOTAL: 0										
PROPOSED INDOOR WERS SUBTOTAL: 76										

Score = 0 to 100



WERS = 70



WERS = 50

What does WERS do?

- Calculates ALL water of a house or multi-tenancy building
- Calculates all the different water sources and provides a way to model impact of different source water
 - Potable Water
 - Rainwater
 - Greywater
 - Blackwater
 - Stormwater
- Integrates water!



How is the WERS Different from Other Programs?

- EPA WaterSense, Florida Water Star, LEED for Homes, MWELO
 - Prescriptive, minimum compliance level
 - Pass/Fail, not quantitative
 - Points-based systems that may not reflect value or ROI
 - Administrative requirements, documentation and validation
 - Aspects of project not covered by program (evap cooler, RO filter)
 - Alternative source water, re-use offsets not measured

The WERS tool can be used by homeowners, architects, builders, utilities and municipalities to arrive at a simple metric to compare water use of any property - new or existing



WERS Inputs (Site Info)

- User to fill in the white boxes
- Orange boxes are pull-downs that require a response
- Purple boxes are informational
- Grey boxes need no action
- Cells with a small red triangle have additional guidance provided in a "fly-out" box

Building Information		EXISTING	NEW
New or Existing?	NEW		
Type	Single Home	# of bedrooms	3
# of units total		# of floors	1
Sample set size		ave. floor to floor ht	10
House footprint in sf	2,000.00	main HW pipe dia.	3/4"
Roof sf	2,400.00	distance from WH to MB shower	40.00
Roof Type	Tar & Gravel	distance from WH to kitchen sink	10.00

Climate Information		MUNICIPAL OVERRIDE:
Average Annual Rain	16.07	Average Annual Rain: TBD
Average Annual ETO	4.41	Average Annual ETO: TBD
Average Annual Watering Months	6.00	Average Annual Watering Months: TBD

Site Information		Maximum Allowable Irrigation Per Code	
Lot Size (sf)	8712.00		
Encroachments	600.00		
Under Roof (sf)	2400.00		
Remaining Lot (sf)	5712.00		
		<i>Please only use one method if required by code, otherwise leave both as zero</i>	
		OR	
		by %	0%
		by sf	0.00
			5,712.00

Collection / Infiltration / Land Use Worksheet			
All Turf (sf)	500.00	8.75%	
New Softscape (sf)	2,000.00	35.01%	
Existing Softscape (sf)	0.00	0.00%	
Water Features (sf)	0.00	0.00%	
Permeable Paving (sf)	0.00	0.00%	
TOTAL	2,500.00		
Directed Imp. Paving (sf)	0.00	0.00%	
Remaining Impervious (sf)	400.00	7.00%	
Prohibited Landscape Area (sf)	1,050.00	18.38%	
Other (sf)	1,762.00	30.85%	
must total 100%		0 sf to go	100.00%

Start Here	Indoor Use WERS	Capture & Usage	Exterior Use WERS	WERS REPORT
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Capture & Usage Declaration

- Program needs to be told where the captured water will be used.
- Unless a state or municipality allows combined rainwater and greywater, both are considered separately.
- Depending on the collection and usage, storage tanks are automatically sized.



CU3 Water Re-Use

3.1 Water Demand

3.1.1 Maximum Interior Water Demand [Linked to Indoor Use Tab]

Daily Average Gallon(s) Monthly Average Gallon(s)

3.2 Potential Rainwater Capture Usage Capture sufficient for selected uses

Reusing RW? Filtration/purification system planned?

Ave Monthly Gal / Total Selected Use Ave Gal Unused Indoors

Indoor / Outdoor Use(s)? ALL DW Kitchen Sink Lavatory

Washer Shower and Tub Toilet

3.3 Potential Greywater Capture Usage Purification required for indoor use (section 3.3)

Reusing GW? Filtration/purification system planned?

Ave Monthly Gal / Total Selected Use Ave Gal Unused Indoors

Outdoor Only Use(s)? DW Kitchen Sink Lavatory

None Irrigation Direct Injection Washer Shower and Tub Toilet

CU4 Storage Requirements

4.1 Rainwater Tank Size Tank can handle anticipated load

(minimum size - includes safety factor)

Filtration system verified for rainwater?

Verified Rainwater Tank Size in Gallons

4.2 Greywater Tank Size (Indoor Use) Purification & filtration system must be verified to use tank

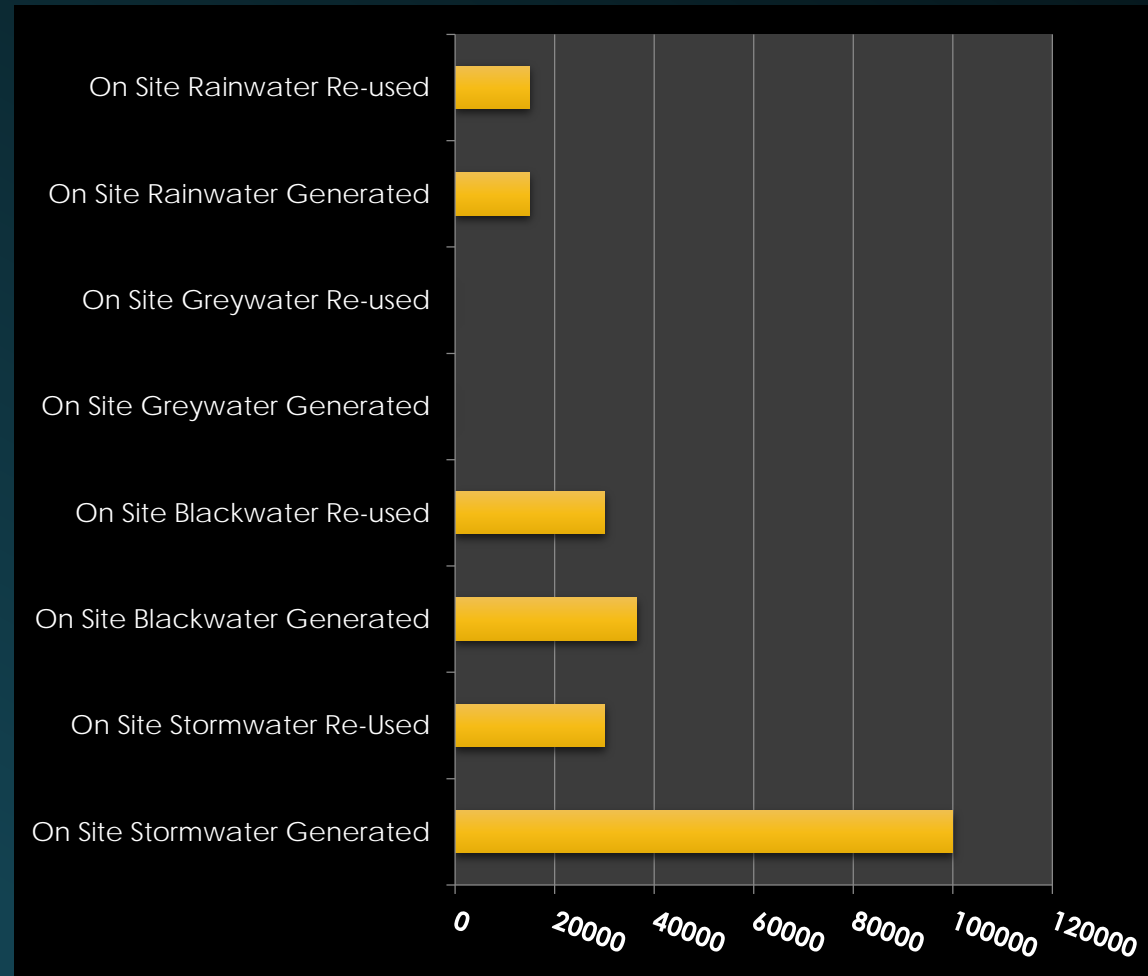
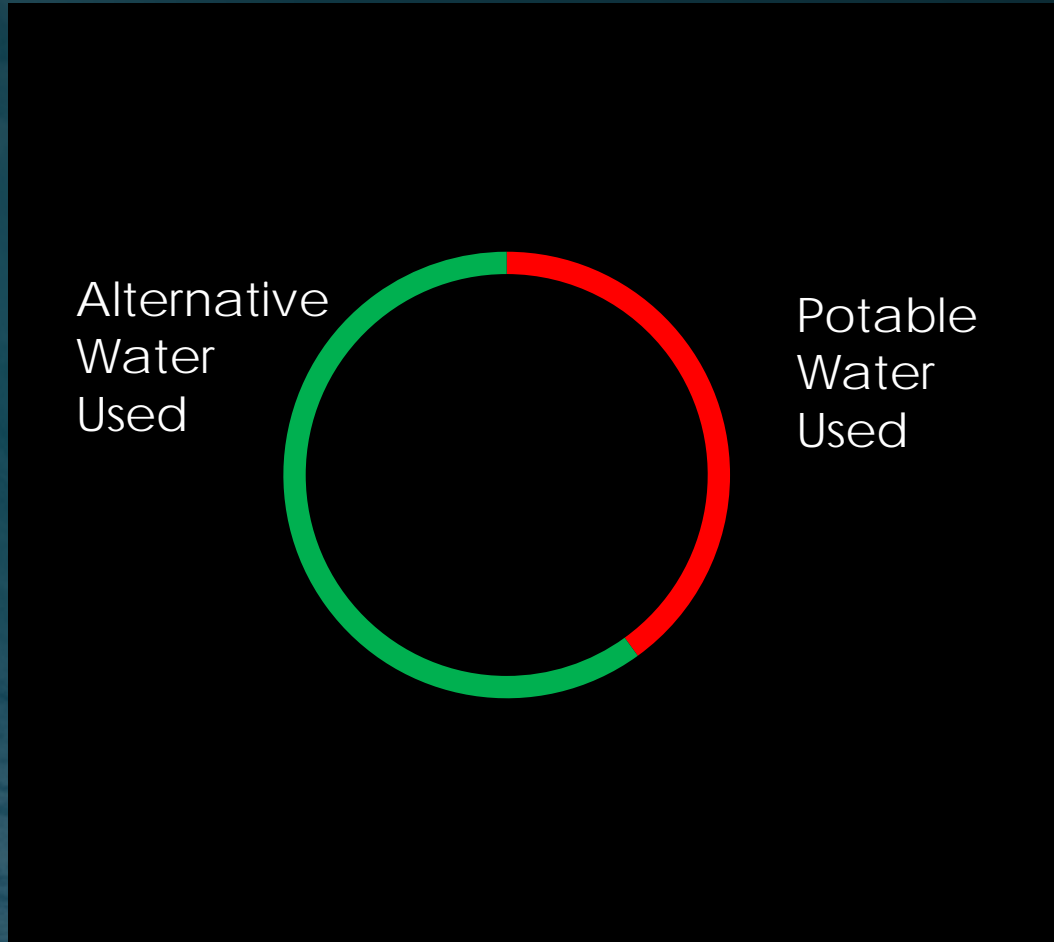
(minimum size - includes safety factor)

Filtration & purification system verified for greywater?

Verified Greywater Tank Size in Gallons

Start Here Indoor Use WERS **Capture & Usage** Exterior Use WERS WERS REPORT Veri

WERS Dashboard

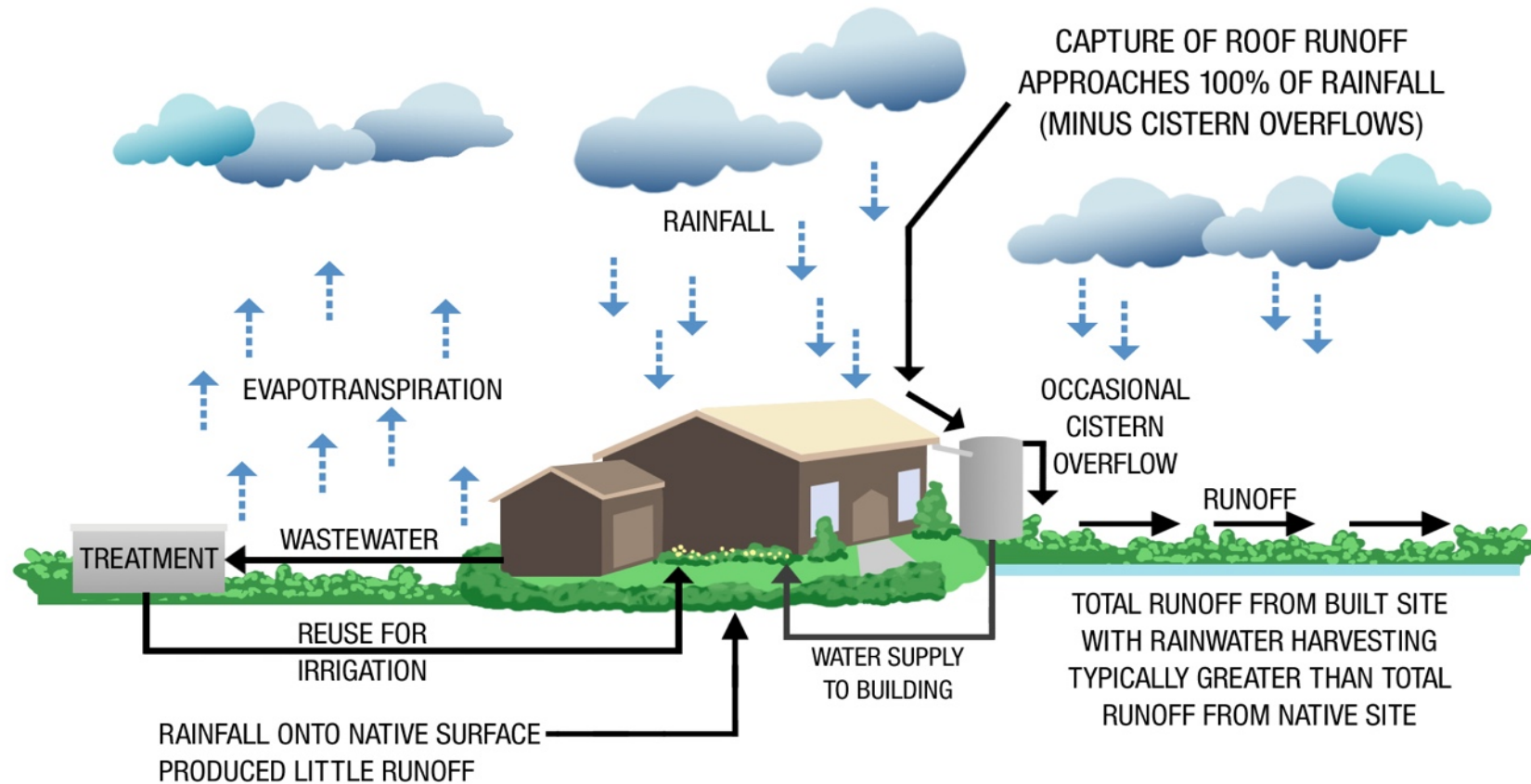




How can WERS be used

- Integrate into the building code to save water
- Create whole house water conservation incentive program
- Create 3rd party verified water conservation program
- Model impact to entire water system of various building practices
- Create one view of all water and start the discussion

WERS – A Total Picture of Water!



BUILDING-SCALE WATER CYCLE



More Information

- Schedule a Online Demonstration
- WERS Verifier Training
 - October 26-28th in Santa Fe, NM
 - November 2-4th Maitland, FL
- www.wers.us
info@greenbuildercoalition.org

Questions?

Thank you!