

Efficiency	Conservation	Curtailment	Note
<p>When you are able to use less water but still get the same value or service from the water you use (e.g. buying a water smart washing machine enables you to do the same level of cleaning but you are now using less water than before to get the same input.</p>			
	<p>Conservation is efficiency. Do what you would typically do (take 10 min shower) using fixtures to use less water.</p>	<p>Being asked to change what you do (take a 5 min shower). Making these changes voluntarily in the face of drought or having these changes enforced using water cops, penalties etc.</p>	
<p>Lay person usually equates with conservation: using the resource in the most efficient manner to achieve the desired result.</p>	<p>As well as efficiency, can also mean the storage of water for later beneficial use.</p>	<p>Short term response of water reduction for drought or other water supply shortage.</p>	

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<p>Equipment (rather than behavior change) that minimizes the amount of water needed for any activity.</p> <p><i>Cost Efficiency:</i> producing water at the lowest possible cost to all members of the public.</p> <p><i>Allocative Efficiency:</i> providing the last units of water to each customer at the same price.</p> <p><i>Economic Efficiency:</i> cost ef + alloc ef so that the cost of the last unit produced and used is equal to the benefit enjoyed.</p>	<p>any method, technology, behavior that reduces water use by customers or that causes the water delivery or production system to [be more efficient]</p>	<p>A sudden, temporary reduction in the district's target for water use by customers.</p>	
<p>State of the art water equipment (for reasonable cost)</p>	<p>Sustainable year in year out without undue inconvenience or denial for a reasonable water life-style.</p>	<p>What ask people to do in drought that is more than their year-in year-out conservation</p>	
<p>Using water more efficiently, i.e. taking shorter showers, turning off faucet while brushing teeth, etc.</p>	<p>Using less water, making some personal sacrifices and cutback choices</p>	<p>Mandatory cut-back, no matter how achieved</p>	

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A tool to help accomplish conservation	A program or individual action to reduce water consumption	A policy decision to force reduction in consumption	
The amount of finished processed water that actually gets to the customers. leaks and other system losses decrease from this. ...not including efficiency at the customer end. ...also not including raw water not captured.	More permanent decrease in water use than curtailment, though it can also be temporary. Includes ways that do not affect standard of life-efficient water fixtures, etc. Also very much includes measures that individuals take upon themselves. No water on while soaping up the in the shower etc.	An asked-for reduction in use, as in the water department asks residents (and businesses) to use 15% less water or some such, and hopefully customers respond (as we have); temporary as measured against a “standard” year of water use.	
Suggests optimizing the decisions and processes of water use. Efficiency might be gained by, e.g., drip irrigation systems, water-efficient appliances etc. ...a technological hardware approach to water use and less reliance on human behavior.	Suggests the efficient retention of water for desired uses. Conservation acts might include repair of pipes, improved catchment mechanisms, efforts to reduce evaporation of reservoirs, etc. It has more of a stewardship quality and results from a reasoned set of actions and may rely on changing human behavior.	Suggests a third party or a generally accepted principle to limit the quantity of water used or the purposes for which it is used or both. Might be limits on the quantity of water used by each household or a rule against watering lawns midday. Curtailment has a suddenness to it, a “chopping off”, due to a temporary circumstance.	We would try to steer away from narrowly defining words that are highly interchangeable in common parlance... it may increase the difficulty of communicating both processes and outcomes.

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<p>Ensuring that the water system as a whole operates efficiently and effectively: low waste (leakage); cost-effective (transparent ROI analyses of capital investments); appropriate and timely usage information available to customers; etc</p>	<p>Long-term ‘flooring’ of core use by maximizing the penetration of proven low-use / high conservation practices</p>	<p>Short term cutbacks in response to exigent circumstances (drought; supply; technical failure etc) Perhaps driven or motivated via marketing, rates, penalties etc.</p> <p>This is necessarily closely related to the community’s tolerance for such curtailment, degree, frequency and duration</p>	<p>More fundamentally, I think the third leg of the s tool relating to the remaining supply/demand gap (“<b>supply</b>”) once we have (1) optimized and institutionalized conservation and (2) we have measured and understand the community’s tolerance for curtailment. That, for me, is different from efficiency and is not captured in the triad you’ve presented.</p> <p>Here we capture notions around material and substantial investments</p>

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<p>Sometimes efficiency is regulated, as with new plumbing codes for water-efficient toilets. Adaptive and easy.</p> <p><i>This particular line comes from a conversation recollected some time later. The adaptive/transformational distinction is mine.</i></p>	<p>Conservation is either voluntary or painlessly/ invisibly regulated (as with plumbing codes). Adaptive and pretty easy.</p>	<p>Curtailment is like pulling a rubber band and expecting it to snap back to the same place it was before. Adaptive (but harsh).</p>	<p>These words don't work with climate change, because they relate to preserving a way of life or returning to a way of life. But if our world is changing, maybe our way of life needs to change. As that change is made, what was curtailment becomes conservation or even just day-to-day life. Transformative.</p>