

Table 1. Example of defining roles enabling mandatory urban water use efficiency

Federal Gov. Roles	National Standard	Water using fixtures and appliances bought and sold in the US meet EPA WaterSense-labeling criteria.
	Funding Mechanism	Congress increases capitalization grants to state Revolving Funds. EPA requires states Priority Rankings assign a category to water efficiency actions when determining eligibility for Drinking Water and Clean Water Revolving Funds.
	Updating Priority	Congress reforms/amends the Water Resources Planning Act in developing a National Water Policy, and updates the priorities of water governance agencies to reflect 21st Century regional water challenges, including regional water use efficiency needs.
State Gov. Roles	Statutory Requirement	State Revolving Fund priority rankings include a category for water efficiency programs and actions.
		Annual set aside adequate for support of water efficiency programs and activities
		Pre-1994 and resold properties, governmental, and commercial properties retrofit with EPA WaterSense-approved fixtures and appliances
		New developments prove 100 years of sustainable water supply and high level of built-in water use efficiency prior to permitting process.
	Regulatory Implementation	Water infrastructure must first be upgraded/repared and unaccounted for water loss reduced to 5% before water purveyors can provide service extensions to new developments, or before acquiring agricultural market-based transfers (emergencies excluded).
		State develops list of mandatory efficiency standards and practices for local government and local water purveyors to follow:
		- Acceptable irrigation equipment, fixtures, and appliances
		- Water efficient technology distribution, rebate, and retrofit programs
		- Acceptable agricultural crops and landscaping types given regional water limitations
		- Conservation encouraging budget-based water rates and increasing block rates
Programmatic Implementation	- Building codes and ordinances appropriate for local government	
	- Detecting leaks and keeping unaccounted for water loss at or below 5%	
	- Dedicated and 100% metering of all water uses	
	- Including embedded energy savings resulting from water use efficiency programs in cost-effective analysis	
Local Gov. Roles	Code & Ordinance	State enters into BULK-purchasing contracts with manufacturers of EPA WaterSense-approved fixtures and appliances, meters, and efficient irrigation technologies to lock in low cost per unit, and provides to local water purveyors with zero- or low-interest loans.
		State provides Technical Assistance/Training Sessions and grants and low-interest loans for local water purveyor planning and implementation.
		State sponsors public information campaign by funding community-based social marketing programs for water efficiency.
		Public facilities retrofit with EPA WaterSense-labeled fixtures and appliances.
		Property tax breaks for home, commercial, and industrial property owners that re-landscaped with native vegetation
		Time-of-day watering schedules for all public and private landscapes
		Permitted developments prove 100 years of sustainable water supply and high level of built-in water use efficiency. (Projected savings do not qualify as supply.)
		Planned growth occurs inward, with mixed-use development using existing water infrastructure.
		Building codes reflect national standards for water-using appliances and fixtures.
		Pre-1994 and resold properties, governmental, and commercial properties retrofit with efficient fixtures and appliances.
Developers retrofit newly built homes with efficient fixtures and appliances prior to acquiring permits for new residential developments.		
Water service extension and impact fees on new developments outside local water agency service area seeking to acquire service.		
Homeowners associations comply with state water efficiency mandates.		
Operational permits for beverage bottling companies using municipal water are conditional to an unsubsidized cost of public water usage.		
Local Water Purveyor Roles	Programmatic Implementation	Apply to Revolving Loan Funds and other state loans and grants to access, distribute, rebate, and install efficient fixtures and appliances, irrigation technologies, meters and upgrade/repair infrastructure according to state mandates.
		Use state Technical Assistance/Training Sessions to design water use efficiency programs.
		Provide incentives to re-landscape with regionally appropriate landscaping.
		Target pre-1994 and resold properties, governmental, and commercial properties in implementing distribution, rebate, and install of EPA WaterSense-labeled fixtures and appliances, ensuring a high penetration rate.
		Activate a new or resold property's water service after verification of efficient fixture and appliance retrofits.
		Budget-based and/or increasing water rate structure with a rate relief program for qualified low-income households. Water rates may contain added regional watershed scarcity value of water. Higher water rates are charged to new extended service area connections in outward growth developments. Full cost recovery and a regional scarcity value applied to beverage bottling companies exporting public water supply.
		"Fix it First" policies stress maintenance of existing infrastructure before expanding, including systemwide leak detection to reduce real unrecoverable water loss to 5%.
		100% metering and dedicated metering programs
		Embedded energy savings benefits resulting from water use efficiency programs are included in cost-effective analysis of programs.