

# CREATING SUSTAINABLE COMMUNITIES

## A GUIDE FOR DEVELOPERS AND COMMUNITIES

### INDOOR WATER CONSERVATION

Across the country, our growing population is putting stress on available water supplies. Between 1950 and 2000, the U.S. population increased nearly 90 percent. However, in that same period, public demand for water increased 209 percent! Americans now use an average of 100 gallons of water each day—enough to fill 1,600 drinking glasses! This increased demand has put additional stress on water supplies, distribution systems, and wastewater treatment systems threatening both human health and the environment.

New Jersey is considered to be a “water rich” state, with an average rainfall of more than 44 inches per year. However, demands on our limited water supply due to population growth and development have increased greatly, making water conservation a prudent step for New Jersey’s citizens year round. During the peak irrigation months of May through September, when we experience hotter, drier summer conditions, it is even more important to conserve water in order to avoid mandatory water use restrictions. Summer outdoor water use increases dramatically as people wash cars, fill pools, and water lawns and gardens. Water conservation allows more water to remain in ground water aquifers and in our streams, lakes and rivers for recreational uses and aesthetic enjoyment while also providing habitat for our wildlife.

Residential water use accounts for nearly 50 percent of all water used in NJ. Therefore, increasing water efficiency in this sector can make a significant impact on the preservation of our water supply and the ecosystems it supports, as well as significantly reduce costs related to the production of potable water, the treatment of wastewater and the need to build the infrastructure to support an increasing demand. In addition, by implementing simple water conservation measures, an individual household can save an average of one-third or more of what they normally would use at home. This water savings is not only critical to the environment but also benefits a resident’s wallet, having the potential to cut an annual water-heating bill by \$20–40 (up to three times this amount if you heat water with electricity). Such water savings can also substantially reduce the cost of septic tanks, leachfields, and capital infrastructure expenses that ultimately trickle down to the consumer by the municipal utilities authority or the outside purveyor.

Indoor water conservation initiatives target water use behavior and integration of high-efficiency plumbing fixtures such as toilets, showers, faucets, and appliances.

### APPLICABLE NEW JERSEY GOALS AND TARGETS

NJDEP has proposed a water conservation and outreach initiative to reduce statewide water consumption by 10%. NJDEP also has the following goals:

- Instill a responsible water ethic in the private and public sectors;
- Diminish consumptive water losses, particularly of potable water sources;
- Reduce unnecessary water waste;
- Save the residents of NJ money by reducing the need to develop new water sources and infrastructure.

### SUGGESTED ACTIONS AND STRATEGIES FOR MUNICIPAL CONSIDERATION

#### Water Efficient Fixtures and Appliances

Strive for maximum water efficiency in construction projects — Require or incentivize most efficient water fixtures allowable in new construction and rehabilitation projects. Implement *retrofit time of sale ordinances*. Low-flow fixtures and devices include:

- Low-flush toilets: Ultra low-flush toilets use only 1.6 gallons of water or less, while conventional toilets use 3.5 to 5 gallons or more of water per flush. Toilets are becoming available with a lower flush option for fluids and a standard flush for solids. Check performance reviews done by consumer testing groups for the most reliable products of this nature. Retrofit devices of this type are also becoming available.

- Toilet dams and displacement devices: These reduce the amount of water used per flush. There are also several commercially available retrofit devices that are inexpensive and eliminate the need to replace old toilets.
- Low-flow showerheads: A low-flow showerhead is basically a conventional showerhead where the surge of water is restricted.
- Faucet aerators: This device can be installed in sinks to break the flowing water into fine droplets and introduce air without compromising quality.
- Waterless urinals and composting toilets

Encourage the installation of additional water conserving appliances such as:

- Efficient washing machines and dishwashers: Water use can be reduced (as much as 40%) by using front-loading washing machines rather than the top-loading ones.

Encourage residential water audits, routine maintenance and upgrades:

- Pressure reduction: The maximum water flow from a fixture operating on a fixed setting can be reduced by lowering the water pressure. The reduction in pressure can reduce the likelihood of leaking water pipes, leaking water heaters, and dripping faucets.
- Check for leaking toilets by dropping a small amount of food coloring into the toilet tank. If it seeps through to the bowl, you have a leak.

The use of the highly conserving fixtures does not entail out-of-the-ordinary installation considerations unless you are installing air-assisted toilets or composting toilets.

Look for products labeled with the EPA *WaterSense* logo. *WaterSense* is a voluntary partnership program sponsored by the U.S. Environmental Protection Agency. Its mission is to protect the future of our nation's water supply by promoting and enhancing the market for water-efficient products and services. In addition, when comparing products, check the test information of the American National Standards Institute.

## Greywater and Wastewater Systems

Encourage the installation of plumbing systems that recycle water (i.e., greywater from kitchen and tubs, clothes washers, and laundry tubs). This recycled water can be used to flush toilets and irrigate landscaping.

Initiate and/or encourage wastewater reuse in your community. Applications may include:

- Urban reuse—the irrigation of public parks, school yards, highway medians, and residential landscapes, as well as for fire protection and toilet flushing in commercial and industrial buildings.
- Agricultural reuse — irrigation of nonfood crops, such as fodder and fiber, commercial nurseries, and pasturelands. High-quality reclaimed water can be used to irrigate food crops.
- Recreational impoundments — such as ponds and lakes.
- Environmental reuse — creating artificial wetlands, enhancing natural wetlands, and sustaining stream flows.
- Industrial reuse — process or makeup water and cooling tower water.

## Water Conservation Initiatives

- Implement Sustainable Landscaping practices in your community and encourage residents to do the same on their properties (See: *Sustainable Landscaping* fact sheet in this series).
- Assess water supply and wastewater systems for replacing and upgrading aged pipes.
- Reduce Supply System Leaks (i.e., water audits or lead-detection programs)
- Develop long-term plan for repairing, replacing, and upgrading water and wastewater infrastructure
- Develop local ordinance to require developers to document and account for projected water use and plan conservation measures. Include standards regarding the inclusion of greywater recycling systems and other re-use/conservation measures.
- Develop local ordinances to encourage smart water use by residents. This may include various time-of-sale ordinances and water use restrictions.<sup>1</sup>
- Develop Reclaimed Water and Greywater Reuse Policy.
- Require projects and property managers to avoid wasteful use of water (excessive watering, hosing sidewalks, etc.).
- Use recycled water for street-sweeping and street flushing.
- Develop Conservation-Oriented Rate Structures (e.g., metering; use of increasing block rate structures).
- Develop Drought Response Contingency Plans.
- Initiate Community Outreach and Education Campaigns (consider partnering with hardware stores or other suppliers to offer discount water reduction kits).
- Audit and retrofit commercial, institutional and public facilities.
- Provide home water audits.
- Offer residential leak-detection programs.
- Sponsor water conservation awards program for businesses.
- Offer water conservation education programs in schools.
- Encourage residents to participate in the following water wise practices:
  - Check and fix leaky faucets, showerheads and toilet tanks;
  - Fill a pitcher of water and to keep in the fridge in lieu of letting the faucet water run cold;
  - Take short showers, turn the water off while shampooing conditioning your hair;
  - Turn off water while brushing teeth, shaving and washing dishes;
  - Don't use the toilet as a garbage can by flushing wastepaper;
  - Put water in the sink to wash and rinse dishes;
  - Only run the dishwasher and clothes washer when full;
  - Water indoor plants with cooking water, rinse water or dehumidifier water;
  - Think water-wise when cleaning up outdoors, sweep the walk ways instead of hosing them down.

<sup>1</sup> See: Sample Ordinance at Township of Medford NJ Water Conservation regulations at Chapter 121 (Sewer and Water), Section K. (Ordinance. No. 2000-7) [www.adeca.state.al.us/Office%20of%20Water%20Resources/Document%20Library/SampleOrdinancePage.pdf](http://www.adeca.state.al.us/Office%20of%20Water%20Resources/Document%20Library/SampleOrdinancePage.pdf)

## **STATE TECHNICAL/FINANCIAL ASSISTANCE**

Contact the NJDEP, Division of Water Supply at (609) 292-7219 or go to [www.nj.gov/dep/watersupply/](http://www.nj.gov/dep/watersupply/) for information about localized participation in the Statewide Water Conservation Outreach and Education Campaign.

## **FURTHER INFORMATION**

NJ Drought Information/ Water Conservation: Ideas for Saving Water - [www.njdrought.org/ideas.html](http://www.njdrought.org/ideas.html)

A Sourcebook for Green and Sustainable Building - [www.greenbuilder.com/sourcebook/](http://www.greenbuilder.com/sourcebook/)

EPA's WaterSense: Efficiency Made Easy - [www.epa.gov/owm/water-efficiency/](http://www.epa.gov/owm/water-efficiency/)

H2O House Water Saver Home - [www.h2ouse.org/](http://www.h2ouse.org/)

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