



OLR RESEARCH REPORT

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OLR BACKGROUNDER: NOR ANY DROP TO DRINK – PREPARING FOR DROUGHT IN CONNECTICUT

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INTRODUCTION

This summer has seen an increased focus nationally on drought and its effects. Nationally, in July 2012, 71% of the U.S. was in an abnormally dry to exceptional drought condition, with about 19% of the country in the two worst drought categories (extreme or exceptional). The Palmer Drought Index, used to compare droughts over time, was the highest it has been since December 1956.

While the worst of the drought did not reach Connecticut, in August 2012, 79% of the state was abnormally dry and 10% (in the northern part of the state) was in a moderate drought. Moreover, major droughts occurred in Connecticut 1964-1968, 1981, 1987, and 2002.

This report describes Connecticut's drought preparedness and response plan, which was developed in 2003 in response to the state's previous major droughts. It also describes issues that have emerged subsequent to the plan's adoption.

2003 DROUGHT PREPAREDNESS AND RESPONSE PLAN

In response to previous droughts, the state developed a drought preparedness and response plan in 2003. The plan was developed by staff from the departments of Environmental Protection (DEP), Public Health (DPH), Public Utility Control (DPUC), and Agriculture, and the offices of Emergency Management and Policy and Management (OPM). (The Office of Emergency Management is now part of the Department of Emergency Services and Public Protection.) The plan was accepted by the Water Planning Council, which at that time consisted of the heads of DEP, DPH, DPUC, and OPM. [PA 11-80](#) merged DEP and DPUC into the Department of Energy and Environmental Protection (DEEP), and the council currently has two DEEP representatives.

The [plan](#) begins with by discussing drought characteristics and the responsibilities of relevant state and federal agencies. It describes the steps the state had already taken to address water supply issues. Among other things, the water companies that serve over 1,000 people must prepare water supply plans. These plans must have water conservation and emergency contingency plan components.

Drought Stages and Responses

The 2003 preparedness plan establishes criteria for declaring five stages of a drought (advisory, watch, warning, drought emergency, and drought recovery) based on current and forecasted conditions of surface waters, ground water, reservoirs, soils, and vegetation relative to normal conditions. Table 1 describes examples of the criteria for and action steps associated with each stage.

Table 1: Drought Stages and Action Steps

Stage	Criteria	Action Steps
Advisory	Reservoirs below 80% of normal levels Precipitation over the prior two months less than 65% of normal	Set a voluntary goal of 10% reduction in water use Disseminate information on water conservation tips to homeowners
Watch	Reservoirs below 70% of normal levels Precipitation over the prior three months less than 65% of normal	Set a voluntary water use reduction goal of 15% Monitor implementation of individual water supply plans and determine if local/regional water supply situation warrants a targeted emergency declaration

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Stage	Criteria	Action Steps
Warning	Reservoirs below 60% of normal levels Precipitation over the prior four months less than 65% of normal	Set a water use reduction goal of 20% Establish drought task force of state and local government personnel and private interests to (1) coordinate the actions of state agencies and other organizations to respond to immediate and temporary need for providing emergency drinking water to communities that are expected to exhaust their supply of or access to potable drinking water and (2) assess and report potential impacts of water shortage on state's economy, communities, and agricultural and natural resources
Emergency	Reservoirs below 50% of normal levels or less than 50% of needed supply Precipitation over the prior six months less than 65% of normal	Governor declares a water supply emergency Mandatory 25% water conservation Governor activates appropriate elements of the CT National Guard as necessary
Recovery	Water supply returns to normal levels	OPM administers available funding of federal long-term drought relief Follow-up with drought-impacted community water systems to restore operations and to ensure that drought-driven system improvements and modifications comply with applicable standards

Nonessential Water Uses During a Drought

The plan notes that identifying nonessential water uses during the earlier phases of a drought would depend on the season, the supply capacity of a particular utility, and the severity of the drought in a particular area. Uses that would generally be considered nonessential during a drought emergency include: lawn watering, washing vehicles by owners, recreational outdoor uses, filling pools, and serving water at restaurants unless requested by the customer.

Use of Non-Potable Water

The plan also provides guidance on the use of non-potable water. It allows the temporary use of treated water from sewage treatment plants, with DPH and DEEP approval, for specified uses under certain conditions. Among the uses that the agencies could allow are for (1) watering non-edible crops, golf courses, and nurseries and (2) for street sweeping. Unless specifically approved by DPH, the water could not be used on residential lawns or edible crops or in any area where there is a high probability of human contact with the water.

SUBSEQUENT DEVELOPMENTS

Inconsistent Drought Plans

The Water Planning Council established an advisory group (the WPCAG), pursuant to [PA 07-4 of the June Special Session](#), to help it research and analyze water industry issues. The WPCAG has 17 members representing a variety of water resources interests. It has established a drought workgroup including representatives of water companies, environmental organizations, the landscape and nursery industry and state, regional and municipal government.

The state issued drought advisories in 2007 and 2010. The advisories revealed some shortcomings in the state's plan and the drought workgroup has subsequently been evaluating the state plan and the state's needs. For example, the state plan and water company drought plans included in their water supply plans differ in their drought trigger levels. The state considers several broad criteria in determining whether there is a drought, including regional or state-wide precipitation, crop moisture, stream flow, and groundwater and reservoir levels. Individual water companies, on the other hand, focus on the availability of their specific sources of water (e.g., reservoirs). This can lead to inconsistencies, such as during the 2010 drought advisory when state-wide conditions justified a drought advisory but the water sources of many water companies had not declined to a level that would trigger a drought advisory in their individual drought plans and the resulting actions that the company would take. The inconsistency can go in the opposite direction too, with individual water companies triggering drought stages in advance of the state.

Other Issues

As noted above, the state plan calls for deeper water use reductions with each succeeding drought stage, with a mandatory 20% reduction at the drought warning stage. The plan authorizes bans against non-essential water use, but does not specify criteria for them. Such bans could save more than half of the water used in some locations but essentially nothing elsewhere. The Water Planning Council has concluded that attempts to reduce water consumption during drought might be more effective if they focus earlier on large discretionary water uses rather than target all users, many of whom use little water.

The state and most water companies lack authority to enforce water use restrictions, which are primarily enforced by municipalities. The state's 2007 drought advisory highlighted the need for municipalities to have a prearranged procedure for restricting water use when needed. This led to the creation of the state Model Water Use Restriction Ordinance by the Water Planning Council in 2007, which was distributed to all municipalities.

The workgroup is currently exploring possible changes to the model water use ordinance and how best to promote adoption of the ordinance in local communities. It is also considering possible changes to the state plan that would provide greater consistency regarding when water use restrictions are imposed and improve the communication and enforcement of such restrictions.

ADDITIONAL RESOURCES

The state has developed a webpage, <http://www.ct.gov/waterstatus/site/default.asp>, that includes the state plan and model ordinance, information on current water conditions, and the seasonal drought outlook for the nation as a whole. The Water Planning Council's 2012 report to legislature, which addresses drought and a wide range of other water resources issues, is available at <http://eosweb/EOSWEB Linked Documents/628.1 W291ar 2012.pdf>

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