

DW 01-253

INVESTIGATION INTO WATER CONSERVATION

FINAL ORDER

O R D E R N O. 24,243

December 5, 2003

I. BACKGROUND

In 2001, the New Hampshire Public Utilities Commission (Commission) and the Department of Environmental Services (DES) jointly developed a report entitled *Regulatory Barriers to Water Supply Regional Cooperation and Conservation in New Hampshire* (Joint Report). Recommendation 13 of the Joint Report requested the Commission consider water utility ratemaking structures, rate design approaches, establish a pre-approved list of water conservation activities that are eligible for rate reimbursement, establish efficiency programs, such as PAYS or other such assistance to consumers, and develop policy recommendations for implementation, at least on a pilot basis, of these conservation measures.

During the course of 2002, interested persons met in technical sessions with the Commission Staff (Staff) and provided input to Staff as it developed a report on Recommendation 13. Staff's Report was filed with the Commission on March 31, 2003.

II. STAFF REPORT

According to the Staff Report, summer lawn watering constitutes the single largest contributor to water usage spikes. Particularly in smaller systems, these short-lived usage spikes drive the design needs of the overall system. They also lead to misconceptions that community water systems are unreliable, and that the area is "running out of water". Drought conditions in New Hampshire and in other parts of the United States in recent years have highlighted the need to address these usage spikes.

To this end, the Report recommended the Commission allow utilities to develop seasonal rate structures to address high usage peaks during the summer months. The Report envisioned that the Commission consider seasonal rate structures and other water conservation measures in the context of rate cases. During a rate case, information such as demand and supply characteristics, seasonal character of the water system, consumption trends, and lost water would be available for the Commission's review. The Commission would then be able to determine appropriate seasonal rates or some other alternative approaches to rate design.

The Report also recommended the Commission consider allowing water utilities to file new tariff provisions allowing

the imposition of penalties for violations of water use restrictions. Such tariff provisions would be temporary, and would be in effect only during specifically defined periods of drought. The Report cited as models *Manchester Water Works and Hampstead Area Water Company, Inc.*, Order No. 24,002 in Docket No. DW 02-077 (2002) where the utilities were authorized to put penalties in place for a limited time. The Report stated that instituting a process for filing water use restriction tariffs ahead of time, for use during drought conditions or other conditions of inadequate supply, may assist in preventing serious problems in some water systems.

Participants discussed the use of rate structures to achieve water conservation. Utilities voiced their concerns of revenue instability, believing that large scale changes to their rate structure would cause revenue to be unstable. Instead, they support seasonal rates, anticipating they would be most effective at curbing excessive water use during the high demand peaks but are short enough in duration to minimize the potential of lost revenues to the utility due to lower usage.

Enforcement during periods of drought garnered much attention at the technical sessions. Some participants favored municipal ordinances to give municipal and privately-held utilities power to enforce water conservation measures.

Metering, billing, and customer awareness issues were also raised. Participants noted that certain customers may feel unable to respond to price signals if, in the case of apartments or condominium developments, they share a single meter with multiple customers. Participants also noted that quarterly billing hampers customer awareness of seasonal rate changes. Participants believed more frequent billing and increased customer education by utilities could overcome these concerns. Utilities were hesitant, however, to expend money on education campaigns or commit to hiring additional staff unless the expenditures are pre-approved by the Commission.

The Staff Report recommended, therefore, that the Commission allow a utility to submit a list of water conservation measures for pre-approval by the Commission. Further, the Staff Report recommended that subsequent expenditures be deferred on the books of the utility until a rate proceeding, when they would be submitted for approval and recovery by the utility.

Participants also expressed their desire that any demand-side management (DSM) programs be implemented on a state-wide basis. Participants believed that New Hampshire's heavy reliance on private wells would limit the reach of individual utility-specific DSM programs.

Staff's Report described the efforts of California-American Water Company to achieve a twenty-percent reduction in water usage in its Monterey, California District. California-American undertook a three-year experimental program to reduce water consumption that combined rebate-style programs, water district ordinances, inclining rate blocks, customer allotments and substantial public education. The program cost \$600,000 in the first year, however, Staff reported that California-American believed it could reduce that figure to \$100,000 to \$200,000 and phase out rebates now that the program had achieved its target reduction. Staff's Report cautioned, however, that other states, such as Florida, have reported diminished customer conservation in subsequent years. Florida's data on the level of sustained customer response differs from California-American's experience and implies further investigation may be needed to determine if any specific factors exist that explain the differing results.

The Staff Report also recommended that a DSM program such as PAYS be implemented on a state-wide basis. Because a broad based water efficiency program is a new concept and the funding means have yet to be determined, the Report recommended the Commission seek direction from the legislature before mandating such a program.

III. COMMISSION ANALYSIS

A. Rate Structures and Tariffs

We are aware that a number of rate structures have the potential to promote water conservation by utility customers. The Commission has previously allowed imposition of water use restrictions, especially during peak summer months, to curb excessive water use by customers. See, e.g., *Integrated Water System, Inc.* 80 NH PUC 363 (1995); *Manchester Water Works/Hampstead Area Water Company, Inc.* Order No. 24,002 in Docket No. DW 02-077 (June 27, 2002). After our experience with drought conditions in 2001 and 2002, the Commission solicited tariff filings establishing temporary measures for non-compliance with restrictions on water use during drought conditions. *Manchester Water Works, Inc.* and *Hampstead Area Water Company* responded by proposing temporary conservation measures in their tariffs. The Commission approved these temporary measures in Docket No. DW 02-077.

The analysis regarding water use restrictions in Docket No. DW 02-077 was utility-specific. We continue to believe that the analysis of the most appropriate conservation rate structure should be done on a utility specific basis as well. Differing utility characteristics and customer demographics affect what rate structure will work best for a

utility. For example, seasonal rates during periods of drought will not work well for utilities that bill quarterly. Certain rate structures are also of limited value if customers are not billed according to metered usage. Furthermore, a utility may need to consider penalties, such as fines or shut-offs, in addition to or in lieu of rate changes.

The utilities' concerns regarding rate instability also needs to be reviewed on a utility-specific basis when implementing conservation rate structures. Rate instability stems from the cost based method of how rates are historically structured and how fixed costs and variable costs are accommodated. Fixed costs generally refer to meter reading, maintenance, billing and other expenses not directly related to the quantity of water used. Variable costs, such as costs for chemicals and electricity, vary with the quantity of water used.

A common feature of rate structures is to recover fixed costs with a fixed charge and variable costs through a per-gallon charge. For water utilities, however, fixed costs account for a larger share of total costs than variable costs. The proportion of fixed costs for water utilities is larger than is usually seen in the electricity or gas utilities. This feature becomes significant to water utilities when rate structures produce fewer volume sales and revenue from per-

gallon charges without a commensurate reduction of variable costs. This produces an adverse impact on the utilities' profits that the Commission must consider on a utility-specific basis.

Rate instability can be mitigated when the reduction in expenses and the potential cost savings associated with delayed capital facilities are weighed against a potential reduction in water revenues. Review of a utility's consumption data, lost water, and growth demand will be essential to a thorough evaluation of proposed conservation rates.

With respect to inclining block rates, particular attention must be paid to delineating usage blocks. If revenues are expected to decline more than costs, a utility will have little incentive to implement conservation programs without rate relief. Price elasticity of demand must also be considered in estimating a utility's revenue needs. Inclining block rates may not have a significant deterrent effect if the customer base is relatively affluent. A further complication is the effect that demand reductions may have on the amount of used and useful plant that will be included in a utility's rate base in future rate cases. These considerations must take place on a utility-specific level.

The Commission, therefore, supports consideration of conservation rate structures in proceedings designed to evaluate a utility's overall rate design. The Commission will support inclusion of conservation rates, penalties, and other conservation measures in tariffs, where appropriate, so long as they are just and reasonable as required by RSA 378:7. The Commission agrees with the Staff Report that filing water conservation tariffs ahead of time, for use during drought conditions or other conditions of inadequate supply, may assist in preventing serious problems in some water systems.

B. Lost Water

We recognize that water conservation rate structures are intended to incent conservation by end users. We also recognize that water utilities themselves are in a position to conserve their water resources. Therefore, before we approve conservation rate structures, we find that a water utility should demonstrate to the Commission that it, too, is conserving water. Quantification of lost water by the utility thus becomes an important underlying issue to implementing conservation rates. It is fair to require a utility to ensure it is taking steps to reduce lost water before we approve imposition of conservation measures on end users.

The Commission has required water utilities to report lost water in the past and, in certain situations, has set lost water percentage goals. See *Central Water Company*, 86 NH PUC 337 (2001); *Tioga River Water Company, Inc.*, Order No. 24,097, December 16, 2002; *White Rock Water Company, Inc.*, Order No. 24,033, August 9, 2002. The Commission is mindful though that information contained in lost water reports must be evaluated against the specific characteristics of a water system. Seasonal customers, for instance, can skew lost water percentages, thus making it appear that a particular water system has a lost water problem. Because setting lost water goals involves a system-specific determination, we will not set across-the-board percentage goals at this time. As with conservation rates, we will work with utilities on a utility-specific basis to develop appropriate lost water goals. Accordingly, we direct all water utilities with the capability to do so, to file lost water reports annually with their Annual Reports. The reports should show lost water data tabulated monthly. We recognize some water systems do not have master meters or consumption meters. The Commission will address this issue with each water utility on a case-by-case basis.

C. Pre-Approved List of Expenditures

The Staff Report included a list of proposed water conservation activities eligible for rate reimbursement. We will defer consideration of the proposed list and direct Staff to commence a rulemaking process for these proposed activities. The areas subject to rulemaking should include but not be limited to costs associated with Public Education, Outreach, and Technical Assistance; Water Fixture Retrofitting and Replacement; and System Metering and Improvements.

D. Demand Side Management Programs

For over a decade, the Commission has supported electric and gas utility energy efficiency programs directed at lowering consumer demand. The Commission's support for efficiency in the water utility industry has mainly focused on requiring utilities to meter customers and move toward monthly billing. The Commission has felt it important that customers receive monthly metered bills so they are given timely price signals which afford them the opportunity to adjust their water consumption on a timely basis. We agree with the Staff Report that a water efficiency program should be investigated at this time.

Successful water efficiency programs, such as the California-American Monterey District program mentioned in

Staff's report, offer useful information. The complement of rebate-style programs, water district ordinances, and substantial public education yielded a minimum twenty percent reduction in water consumption, which we find to be significant. Staff's Report also cited, however, a Florida program that did not achieve the same sustained water reductions. We believe the differences between the Florida and California outcomes necessitate further investigation.

New Hampshire's water situation may not be as dire as the situation in the Monterey Peninsula Water Management District, however, New Hampshire can draw valuable information from California-American's experience. First and foremost, it appears that rebate-styled programs were successful and produced documented water conservation. California-American's success bodes well for the future of water efficiency programs in New Hampshire. New Hampshire has seen success in rebate-style energy efficiency programs offered by electric and gas utilities. Expanding programs to include water efficiency measures may repeat California-American's success here.

Developing a program in New Hampshire, however, is not without difficulties. As the Staff Report noted, much of New Hampshire is served by private wells or municipal utilities and only a portion of the state is served by regulated utilities.

This lack of broad reach makes it impossible for utility-based programs to reach many of the state's water consumers. Thus we find that any state-wide water efficiency program funded by utility surcharge or other means should be addressed by the legislature.

Based upon the foregoing, it is hereby

ORDERED, that all regulated water utilities submit annual accounting of lost water, tabulated monthly, with their annual reports; and it is

FURTHER ORDERED, that a new rulemaking docket be opened to investigate and consider water conservation activities that may be eligible for rate reimbursement; and it is

FURTHER ORDERED, that all water utilities that make filings for rate increases after the date of this order include with such filings information concerning their water conservation efforts as well as a proposal for a rate design that will incent conservation by customers.

By order of the Public Utilities Commission of New
Hampshire this fifth day of December, 2003.

Thomas B. Getz
Chairman

Susan S. Geiger
Commissioner

Graham J. Morrison
Commissioner

Attested by:

Michelle A. Caraway
Assistant Executive Director