

URI Water Conservation Program Development

Principle Investigators

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Methodology

Since water use on the University of Rhode Island Campus is not metered by building, the first task was to audit all of the buildings on the Kingston Campus that are connected to the URI water system. This included determining the types of use (drinking, waste transport and cooling) as well as the types and number of fixtures. The survey included information about academic, residential, athletic, research, office and food service buildings. A companion study also surveyed the utility rooms in these buildings that focused primarily on steam condensate return. In addition, estimates have been obtained of the number of people using each building as well the amount of water being used to irrigate the athletic and turf fields.

Principle Findings and Significance

An EPA computer program "Wave Saver" has been obtained and has been used to estimate water use in the various areas. The total amount of water used has been compared to the amount of water pumped from the University of Rhode Island well. Although the estimated amount was somewhat less than the actual amount pumped, the numbers are acceptable. The data is now being analyzed to determine appropriate efforts to reduce use.

At the time of the survey only 40% of the condensate was being returned to the heating (steam generating) plant. Efforts by Facilities Department this spring have increased the condensate return to 50%. These efforts are on-going. In addition replacement of bathroom fixtures are being evaluated. About three quarters of the amount of water used is attributed to indoor plumbing.

During the audit a number of situations were observed where water use could be immediately reduced. These included changing the blow-down frequency of building cooling towers, repairing stuck or inoperable water fixtures and added condensate return pumps.

Conclusions

The final product from this project is a fully operational copy of "Wave Saver" that can be used to improve the operation of the water system and permit evaluation of the savings in making proposed changes. In addition the project has familiarized the 5 engineering students who have worked on the project with water conservation, various aspects of the operation of water systems and some available methods of evaluating components used in a system.