



WAA TA

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ANNUAL REPORT: YEAR II

With publication of this issue, WAA TA' completes its second year as the newsletter of the Virgin Islands Water Resources Research Center. Through this newsletter we have tried to keep our readers informed of our activities here at the Center and of activities at other Water Centers on the U.S. mainland that might be relevant to readers in the V.I. We periodically review publications of interest and advise on how they may be obtained. Also, as part of our information dissemination effort we have regularly published monthly summaries of water statistics. It is our intent to continue publishing WAA TA' and invite comments and criticisms from our readers on how WAA TA' may be improved.

Many persons and agencies have supported us during the past year. In particular we are grateful to the Public Works Department, the Water and Power Authority, Civil Defense, the Hess Oil Company, and the Virgin Islands Housing Authority for regularly submitting monthly water use reports to us. We wish especially to thank Ms. Romanella Henry here at CRI for the great job she does in typing WAA TA' and Mr. Winston Charles and Mr. Wayne Crooke of

the College's Duplicating Services Department for printing the newsletter

We continually update our mailing list and encourage interested persons to call or write us in order to be added to it.

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PUBLICATION OF INTEREST

The Water Center recently obtained a copy of a very informative publication titled "Rain Dance Doesn't Work Here Anymore or Water Use and Citizen Attitudes Towards Water Use in Albuquerque, New Mexico" by Peter A. Lupsha, Don P. Schlegel, and Robert U. Anderson. The authors explain that the title is meant to convey the shifting realities of the urban southwest. The first inhabitants of this area lived in close harmony and profound awareness of basic resources, particularly water. Today urbanization has provided this resource in an abundance beyond the dreams of the "Old Ones."

In the study, 345 respondents in single family residences were interviewed, and their attitudes towards water use compared with data from the computerized records of the city of Albuquerque on their actual water consumption. This comparative use data then formed the basis for attempting to discover what were the major factors in residential use in the city of Albuquerque.

The study found that economic variables such as income, house value and

lot size were the key factors in high water demand. In addition, the number of persons in the household proved to be the only significant sociological variable in creating high demand. Other sociological variables, length of residence, place of socialization, area of upbringing, all proved to be of little or no significance in water use. The cultural variable of ethnicity did, however, appear to have an impact on use, even when controlled for income. The psychological variables such as attitude towards water as a problem or water conservation did prove to have some impact on use. All of these variables though, were of small significance when compared with the economic variables of income and house value. The study concluded with the recommendation that the above mentioned variables ". . . should be amenable to a programmed scenario of pricing, conservation education and legal or zoning changes which could all be used to significantly lower water use and demand in the city."

The publication, written in 1975, is available from: The Division of Government Research, The University of New Mexico, Albuquerque, New Mexico.

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SHEPPARD RECIPIENT OF VERNON AWARD
AT NWSIA CONFERENCE IN NEW ORLEANS

Mr. George P. Sheppard was presented the National Water Supply Improvement Association (NWSIA) Robert O. Vernon Award for his distinguished service with the Virgin Islands Water and Power Authority (WAPA). The Vernon Award is presented each year to an outstanding individual who has demonstrated actual operating experience with desalting or other water treatment systems for a significant period of time.

Following his introduction at the NWSIA meeting in New Orleans in September 1979, Sheppard related how he became interested in desalting. He

said, "As a boy in my home of Antigua in the West Indies, I had to walk many miles to get fresh water for my family. I saw dogs dying of thirst, and yet we were surrounded by water in the sea." His interest in making fresh water from the sea grew until he was hired by WAPA in the Virgin Islands.

Sheppard's eagerness to improve himself and conditions for his fellow man resulted in promotions until he was placed in charge of the authority's operations programs. An unfortunate diesel engine explosion in 1977 resulted in painful burns on both of Sheppard's hands, requiring extensive skin grafting and several operations. He has not been able to return to work since, but doctors are optimistic that by January 1980 Sheppard will be recovered to the point where he can once again work in his chosen field.

During the past two years, however, Sheppard has not been idle. He recently completed a book titled Fresh Water From the Sea and What it Means to Me. The purpose of this handbook is to present to beginners as well as to established engineers and others in the field of desalination a first hand, easy-to-understand, overall picture of the operation of a desalination plant from intake to production and distribution. Related problems and preventive maintenance of the plant are also discussed on a general basis. This handbook is available at a cost of \$11.00 which includes Air Mail postage. Persons interested in obtaining copies should write Mr. Sheppard at P.O. Box 905, Christiansted, St. Croix, U.S. Virgin Islands, 00820, enclosing a certified check or money order made payable to George Sheppard.

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WATER USE PATTERN STUDY IN PROGRESS

A project to determine water use patterns in the Virgin Islands is now underway at the Water Resources Research Center. Principal investigators on this project are Donald C. Bullock, a consultant to the Center, and Henry H. Smith, a research associate at the Center.

The water situation in the Virgin Islands may be thought of as unique in that the V.I. represents a futuristic microcosm of a community's efforts to deal with usage of potable water under conditions of extreme scarcity and very high production costs. While much of the U.S. mainland is just beginning to feel the crunch of limited water supply and high water costs, the Virgin Islands have historically lived under these conditions.

Water economics traditionally indicate that per capita consumption increases hand in hand with an increasing standard of living. The degree of this correlation may vary quite differently in areas where production costs exceed \$15 per thousand gallons as opposed to areas where production costs might be one-tenth this amount. Therefore, one aspect of the current study is to investigate quantitatively whether or not a high standard of living has been achieved and maintained in the V.I. with a lower water consumption than would have been expected.

Another goal of the study is to determine more accurately the gallon per capita per day (gpcd) water use figures for the Virgin Islands. Since current opinions and projections range from 40 to 150 gpcd, the results of the study may provide more accurate figures for future planning. Although metered and existing use records will be utilized, the investigators intend to generate new data using a low-cost method of use monitoring on systems with

individual electric water pumps. The method being tested, may be of interest to home owners who wish to meter their own usage.

The method basically involves attaching an electric clock (a timer) to the pressure switch of the water pump in such a manner that the clock runs only when the pump is operating. A relation between elapsed clock time and water used is established for the particular installation to obtain the amount of water used over time. Since there is some risk involved in making such an installation, our readers are advised not to do it without obtaining some assistance from a capable source.

Additional study sites are still needed. Of particular interest are sites not experiencing water shortages and sites with dual water systems.

WAA TA' will regularly summarize the progress of this project. Additional information may be obtained by contacting Don Bullock or Henry Smith at the Water Center by calling 774-1252 Ext. 250 or 251.

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WAA TA' STATISTICS

We have had many favorable responses to our request for rainfall data and are thankful for and will use all of them. However, one response went far beyond our expectations. John A. Yntema of Sprat Hole, St. Croix provided us with monthly rainfall data from July 1961 to the present. These data show several interesting characteristics.

Monthly Rainfall (inches)

Most . . . 23.23 in May 1969
Least . . . 0.22 in March 1970

Yearly Rainfall (inches)

Most90.46 in 1979
 Least34.27 in 1964
 Average . . .49.05

We will show a graph of this data in a future issue. Again many thanks for these data.

Statistics for October and November 1979

Rainfall in Inches

	<u>Oct.</u>	<u>Nov.</u>
St. Croix		
A.H. Airport	-	10.35
East End	1.74	9.93
Little Fountain	3.59	15.11
St. Thomas		
Fort Mlyner	7.58	11.59
Dorethea	6.07	9.14
St. John		
Cruz Bay	3.35	11.53
Catherineberg	2.91	10.81

WAPA Water Production (Gallons)

	<u>Oct.</u>	<u>Nov.</u>
St. Thomas	22,068,318	18,151,974
St. Croix	0	13,837,368

A THOUGHT PROVOKING THOUGHT

Arthur W. Lewis, a native of St. Lucia and winner of the 1979 Nobel Prize in Economics writes in Development Planning: The Essentials of Economic Policy (New York: Harper and Row, 1966): "One simple test of the quality of a development plan is to see what it says about water." We at the Center agree wholeheartedly.