

COMMUNITY DEVELOPMENT WATER CONSERVATION PROGRAM: PROJECT HARAMBEE

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On October 15, 1994, a water conservation program was conducted in the Brown Village Community of Southwest Atlanta. Project Harambee (Harambee is a Swahili work meaning "let's pull together") was a demonstration effort that served to provide insights into both social and environmental issues. This paper focuses primarily on the environmental aspect of Project Harambee, specifically the issue of potential water supply savings through residential retrofits.

Expanding growth and limited resources have prompted the Atlanta Regional Commission to project that twenty% of the water supply in the year 2010 will need to come from conservation. Since Atlanta has an average annual rainfall in excess of 50 inches, the public perception is that water conservation is unnecessary. Only during times of drought do we see concerted efforts to conserve, usually precipitated by rationing ordinances. Project Harambee represents the first concentrated effort at residential water conservation in Atlanta, utilizing ultra-low flow toilets.

Project Harambee, developed by EarthBond, a non-profit corporation, was funded by grants from the U.S. Environmental Protection Agency and the Turner foundation. The city of Atlanta's Water Department and CTSI Corporation, a consulting firm and the founder of EarthBond, also provided financial support. The project was modeled after a successful retrofit program in Southern California, developed by CTSI for the Metropolitan Water District of Southern California and its member agencies. In all, \$50,000 was raised to conduct the program.

EarthBond selected the Brown Village of the Atlanta Project and presented its leadership with an outline of the program. The Village leadership in turn presented harambee to the general membership and received the approval to proceed. The program involved the distribution of ultra low-flow toilets and showerheads, provided free of charge, to single family residents of the Brown Village Community. To qualify, customers were asked to complete a participation form and present a copy of their water bill and picture identification to receive the conservation devices.

Customers were given an ultra-low flow toilet(s) and a water efficient shower head(s) to self install in their homes. The toilet, a 1.6 gallon per flush model manufactured in Atlanta by Toto KIKI, USA, has excelled in performance tests conducted by the Los Angeles Department of Water and Power and the New York Department of Environmental

Protection. Customers were also given a 2.5 gallon per minute shower head manufactured by Niagara Conservation, Inc. The only stipulation for participation was for the customer to install the measures within a two week period. Collection of the old toilets and shower heads was conducted on October 29, 1994. A total of 340 toilets and 350 shower heads were distributed to 247 households through Project Harambee. Based on a report published for the Conserve '93 Conference of the American Water Works Association by James M. Chansler and Victor J. Pujas, the ultra-low flow toilet will save 16 gallons per capita per day. According to that same report, low-flow shower heads will save 7.2 gallons of water per capita per day. Using these estimates and assuming 3 persons per household the retrofit should project savings of 17,000 gallons per day and 6.2 million gallons annually.

While no official water savings results are available to date, early feedback from some participants indicate as much as 40% savings in their first billing since installation of the toilets and shower heads. We expect the results will vary widely and depend on several factors including: the number of persons per household, age of the toilet replaced, condition of the replaced fixtures, and the customers willingness to identify and repair leaks. An ongoing review of consumption data is being conducted by the U.S. EPA, the Atlanta Water Department and CTSI which should verify our water savings projections later this year.

Installing low-flow fixtures and fittings, thereby reducing water demand, can have additional advantages for a community. Less water passing through the system, for instance, means less water and wastewater to treat. Other benefits include reduced energy, chemical, and other costs associated with the treatment and distribution of water; deferred costs associated with new or expanded water supply and distribution facilities; and residential savings from reduced energy bills. The savings provided by Project Harambee from water alone is expected to be \$120 per family annually, over \$30,000 of that will go back into the community as discretionary income.

Plans to expand Project Harambee are in progress. The most encouraging effort is a proposed plan to retrofit the 22,000 homes that constitute the Empowerment Zone in Atlanta. The area, which forms a semi-circle around South Atlanta, is targeted for revitalization through grants and

federal tax credits totaling \$250 million. Using the aforementioned assumptions, the following accomplishments could be expected:

Persons per household	3
Water savings per capita	23.2 gal.
Total estimated participants	66,000
Estimated water savings per day	1.5 mill. gal.
Economic value to community	\$2.5 mill. annually
Projected costs of program	\$3.9 mill.
Program pay back	17 months

With potential savings like these, it makes sense to continue to promote Project Harambee and other community economic development programs that involve demand side management of energy and natural resources.