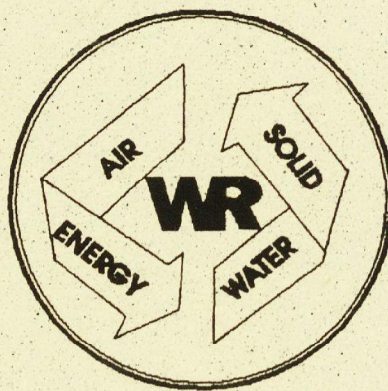


**Recycling the Ultimate Resource:**

**Retired Professional Assistance**

**in Waste Reduction Programs**

**in Region IV**





*Since 1970, EPA has been charged with the task of establishing and enforcing this country's environmental laws. Many individuals do not require regulations to be convinced of the need to protect their surroundings. They understand the importance of keeping their world clean. However, it is not clear to all of them what actions to take. EPA recognizes the value in providing a helping hand to those in need of information about pollution prevention.*

*That is why we are so proud of the technical assistance centers across the Southeast, which are there to assist businesses seeking to fill the information void about cleaner technologies and processes. EPA is especially grateful for the expertise provided by the many Retired Associates who staff these assistance centers. Their decisions to contribute their life and work experiences to the pollution prevention effort give it instant credibility and make the whole venture possible.*

*We hope to strengthen waste reduction technical assistance - Retired Associates are an important part of this effort.*

*- Thomas L. Nessmith, Chief  
Policy, Planning and Evaluation Branch  
EPA Region IV*

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# **Introduction**

Efforts by various levels of government to promote sound waste management and environmental protection--typically through laws and regulations--have often been less effective than desired and more costly to enforce than expected. Understandably, industry has often been more concerned about reducing compliance costs and their effects on profits than about reducing wastes and their effects on the environment. The threat of penalties has produced suspicion of inspections and assessments, resistance to almost any prescribed changes, and, at best, only grudging, minimal compliance with the letter of the law.

Many states have instituted Waste Reduction Assistance (WRA) or Pollution Prevention Programs to address these problems and the unserved need they represent. In contrast to regulation and enforcement, the WRA approach is based on voluntary cooperation among industries, university industrial extension programs, and state and federal agencies. Only those small industries that request to participate in these joint projects receive waste management assessments. Most of the state programs offer this assistance as free, nonregulatory, nonbinding, and confidential. It is not the threat of enforcement penalties but the opportunity for significant cost savings that motivates industries to make any changes that may be suggested.

In EPA Region IV state WRA programs, assessments are specifically made outside the context of regulatory and enforcement processes, and the results are held strictly confidential to protect proprietary interests.

Also, industries are under no obligation to implement any of the suggested changes. However, most industries are not only willing but even eager to implement some or all of the changes recommended because they want to take advantage of the associated opportunities for cost savings.

While this approach has obvious benefits for private industries, it is also an effective and economical way for public agencies to accomplish their goals of reducing production of hazardous and other wastes while

at the same time helping produce both environmental and economic benefits in the region, including such significant benefits as reduced needs for future waste disposal capacity and environmental effects monitoring.

The WRA approach does not compete with private enterprise. Such assessments are not commonly available from private consulting firms in the region, nor would many small industries be likely to make the speculative investment of contracting for such services even if they were available, because the extent of any potential saving cannot be identified until after the survey has been completed.

On the other hand, the project may actually stimulate demand for commercial services. WRA assessments do not include designing or constructing any facilities or equipment that may be needed or modifying any processes or techniques as may be recommended. Industries must either implement the waste reduction suggestions on their own or contract with private consulting firms, construction contractors, or other commercial services.

Costs are kept low because most assessments are conducted by retired senior-level engineers, who are specially recruited and given intensive supplemental training to identify and report opportunities for waste reduction. Although these retirees are reimbursed for travel expenses and are paid a modest hourly honorarium to supplement their retirement income, essentially, they volunteer their services as a means of passing on to the next generation the benefit of their specialized expertise and experience. Because the pool of available assessors contains specialists with many years of experience in almost every possible Standard Industrial Classification (SIC) code it is usually possible to choose expertise that closely matches the needs of any particular industry. Because the pool is large, it is usually possible to reduce travel costs by selecting well-qualified retirees who live in the vicinity of almost any industry scheduled for assessment.

# **State Waste Reduction Assistance Programs**

The services of the retirees are coordinated in many different ways in Region IV. Each state WRA program has adopted the method that best fits its own unique situation. This document briefly describes each method now being used.

**In Alabama** a nonprofit 501(3)c corporation, the WRATT Foundation, has been formed. It is a consortium of regulated and regulator, private and public. It includes on its board of directors the Tennessee Valley Authority, the Environmental Protection Agency, the Business Council of Alabama, the Alabama Chemical Association, and the Alabama Department of Environmental Management. It is administered by retired professionals rehired full time or part time under contract to the Foundation. Preassessments are done by the full-time retirees. The WRAs are performed by the part-time retirees. The WRA team drafts the report. The full-time retirees polish it and issue it. Followup is the prerogative of the full-time retirees. A study by Auburn University showed that the industries that have used this program have praised its professionalism and service. The Foundation Outreach Program has provided direct assistance in recruiting, training, marketing, and total program development/implementing to the other states, plus overseas assignments. Published commendations have stimulated strong national and international interest in the Alabama model and foundation approach. *Contact the Executive Director, John Shields, at 205-386-3633 for additional information.*

**In Florida** the WRA program is called the Waste Reduction Assistance Program (WRAP). It is administered by a nonregulatory part of Florida's Department of Environmental Protection. The retirees are assigned a company that has requested a WRA. They perform the entire WRA themselves or with a team and copy the report to the WRAP. Dade County (Miami) also has a Pollution Prevention

Program which makes use of the pool of retirees in Florida. *Contact John Scarboro at 904-488-0300 for additional information about the Florida Program and Lori Cunniff at 305-372-6828 for further information about the Dade County Program.*

**In Georgia** the WRA program is called the Pollution Prevention Assistance Division (P2AD). It is administered by a nonregulatory arm of Georgia's Department of Natural Resources. The preassessment is performed by a team from the P2AD and Georgia Tech Research Institute (GTRI). The assessment is done by a retiree, sometimes with the assistance of a graduate intern. The retiree drafts the report. GTRI provides technical review. P2AD adds the final editorial changes and distributes the report. *Contact Bob Donaghue, Assistant Director, at 404-651-5120 for further information.*

**In Kentucky** the WRA program is called Kentucky Partners. It is administered at the University of Louisville under an agreement with the State of Kentucky. The program staff perform the preassessments, and the retirees accompany the staff in the assessment and in drafting the report. *Contact Joyce St. Clair, Executive Director, at 502-852-7260 for further information.*

**In Mississippi** the WRA programs are called the Mississippi Technical Assistance Program (MSSTAP) and the Mississippi Solid Waste Reduction Assistance Program (MSSWRAP). They are administered at Mississippi State University under an agreement with the state of Mississippi's Waste Reduction and Minimization Program. The retirees are assigned a company that has requested a WRA. They perform the entire WRA and copy the report to MSSTAP. *Contact Caroline or Donald Hill, Directors, at 601-325-8454 for further information.*

**In North Carolina** the WRA program is the Office of Waste

**Reduction**, a nonregulatory arm of North Carolina's Department of Environment, Health, and Natural Resources and the oldest state program in the country. Since it is physically centered in Raleigh, at the eastern end of the state, additional resources were needed at the western end of the state. The state program provides technical oversight for retiree assisted WRAs in western North Carolina. The Land-of-Sky Regional Council (LOS) in Asheville provides administrative services. The Tennessee Valley Authority provided funding for the initial program. A preassessment is performed by the state. Retirees conduct the assessment and submit a draft report. The state completes the report and sends it to the company. The retirees also conduct "water only media" assessments under an agreement between LOS and the Asheville-Buncombe Water Authority. *Contact Gary Hunt, Director, at 919-571-4100 for further information about the state's program. Contact Tom Elmore at 704-254-8131 for further information about the LOS.*

**In South Carolina** the WRA is called the Center for Waste Minimization. It is a nonregulatory arm of South Carolina's Department of Health and Environmental Control. The program is staffed by retired professionals rehired full time or part time as state employees. *Contact Ray Guerrein at 803-734-4715 for further information.*

**In Tennessee** the WRA program is called the Waste Reduction Assistance Program. It is administered by the University of Tennessee's Center for Industrial Services under a contract with Tennessee's Department of Environment and Conservation. This was the first retiree-assisted WRA in the country. The retirees assist the full-time staff (several of whom are rehired retired professionals) to conduct the WRAs. Some of the retirees conduct the entire assessment by themselves and submit a draft report to the staff to be finalized. Others assist the staff in conducting assessments and in training. See the "Tennessee Study" below for the benefits of retiree-assisted WRAs. *Contact George Smelcer, Director, at 615-532-4912 for further information.*



# **Tennessee Study**

The Tennessee Study was the first project to document the benefits of using retirees for WRA work. The services of retirees were coordinated and administered under the oversight of the Waste Reduction Assistance Program (WRAP) at the University of Tennessee Center for Industrial Services, which coordinated the joint pilot project in Tennessee. The Tennessee Valley Authority supplied the funding and oversight for this pilot program in Tennessee beginning in 1989. The study reviewed and documented results of assessments for 32 industries that volunteered to participate.

In 1992, the study requested followup information from the 32 industries involved in the pilot project. Five of the 32 industries declined to participate in the study. The remaining 27 industries agreed to allow publication of their results as anonymous case studies.

These 27 industries documented a combined annual saving of almost \$2,400,000 (table 1) from changes based on these assessments. Rounded, that equals an average saving of almost \$90,000 per industry per year.

In this pilot project, retirees conducted about 75% of the total assessment work; staff from the Center for Industrial Services provided the remaining 25%. Therefore, the portion of the total annual saving for the 27 reporting industries that was attributable to retiree assessments was about \$1,800,000, or an average annual benefit of almost \$67,000 per industry.

Retiree assessment costs were not available on a directly comparable basis, that is, for just the 27 reporting industries. However, the assessment services provided by retirees for the 32 industries contacted for the follow up study totalled \$59,000, or an average cost of \$1,844 per industry.

Even on that basis, if the resulting rate of saving had been realized for only a single year, there would be a 36:1 ratio between the average

benefits and average costs for the pilot project (table 2 and figure 1). In other words, \$36 was saved for every \$1 spent, including not only the direct costs for assessment time and associated travel reimbursement but also all the costs for program development, training, overhead, and reporting. In fact, however, the benefit:cost ratio is continually increasing, because the costs were one-time costs while incremental savings continue accumulating year after year.

## **Tennessee Valley Authority**

The Tennessee Valley Authority is a regional federal agency that assisted (along with the Environmental Protection Agency (EPA) and the University of North Carolina - Asheville) in starting the first retiree-supplemented Waste Reduction Assistance program. A significant goal of TVA's Waste Reduction Assessment and Technology Transfer (WRATT) program is to assist state and local governments in developing similar programs. The recognition the program has received in several national publications has resulted not only in many additional requests for industrial assessments but also in requests to assist state and local governments in developing and implementing similar waste reduction programs. Such programs have now been adopted not only in Region IV by the states of Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee (figure 2) but also by Iowa, New Hampshire, Vermont and the city of Los Angeles, California. Several other state programs have either started retiree-assisted programs or are contemplating doing so. *Contact Carroll Duggan at 615-751-4574 for further information.*

## **EPA Region IV Clearinghouse**

Called the Waste Reduction Resource Center of the Southeast (WRRC), it is housed with the NC state WRA program in Raleigh. It provides free waste reduction information to anyone requesting it in Region IV. It is staffed by previously retired professionals rehired full

time through EPA, Bicentennial Volunteers Incorporated (a 501(3)c non-profit corporation), and the National Caucus and Center on Black Aged - Senior Environmental Employment. The WRRC is funded by EPA Region IV and TVA. *Contact Vic Young, Director, at 800-476-8686 for further information.*

## **The Annual Southeastern Waste Reduction Retiree Conference**

Co-hosted by TVA and EPA Region IV, its purpose is to provide networking and training opportunities for retired professionals working in WRA programs in the Southeast. All retired professionals assisting state WRA programs in EPA Region IV are invited. It was initiated to help keep these retirees current on waste reduction issues and advancements. All of the retirees are also kept on the mailing list for 17 publications related to waste reduction.

## **Guidelines for Starting a Retiree Program**

Listed below are suggestions that should be tailored to accommodate a specific situation.

**Pick** the brains of programs that operate similarly to the way you plan to function.

**Place** a classified advertisement in the newspapers in the locality where you wish to attract retirees. It could read : "Retired engineers to work part time helping companies save money by reducing their wastes. Industrial experience required. Training, small hourly honorarium, and expenses provided. Send resume to ....."

**Interview the applicants with the skills you require. Especially look for ability to interact, write reports, and pick up new ideas.**

**Decide if you want the retirees to be under contract or employees of your organization. If they are contractors, consider how you need to handle social security and income tax withholding, expenses (what is covered, limits), and workman's compensation.**

**Provide general training in waste reduction techniques. Be prepared to provide additional specialized Waste Reduction training. The Tennessee program offers excellent generalized training for a reasonable cost. Through the Alabama Outreach Program, the WRATT Foundation offers total program development and implementation to other states and overseas organizations.**

**Keep your retirees busy. If you do not meet their expectations, they will become disillusioned and drop out of your program. Always let them know that you appreciate their efforts.**

## Tables



**Table 1. Documented Annual Savings for TVA-Funded  
Waste Reduction Projects in Tennessee. 1989-1992**

<b>TVA project No.</b>	<b>Documented annual savings (\$)</b>
8	240,000
9	8,000
10	7,560
11	14,800
12	95,000
14	68,500
15	0
16	65,000
17	8,000
18	20,000
19	3,480
20	10,000
21	49,000
22	15,000
23	3,000
24	0
27,28	960
29	0
31	179,019
33	19,000
34	4,500
35	4,382
36	1,800
37	15,600
40	1,298,025
<u>41</u>	<u>250,000</u>
27 projects	2,380,626

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No data were available for 5 projects

## **Table 2. Benefit:Cost Analysis For TVA-Funded Retiree-Assisted Waste Reduction Assessments**

### **Given:**

Total cost of retirees for 32 audits = \$59,000

Total documented annual savings for 27 audits = \$2,380,626

Fraction of audit work done by retirees = 3/4

### **Results:**

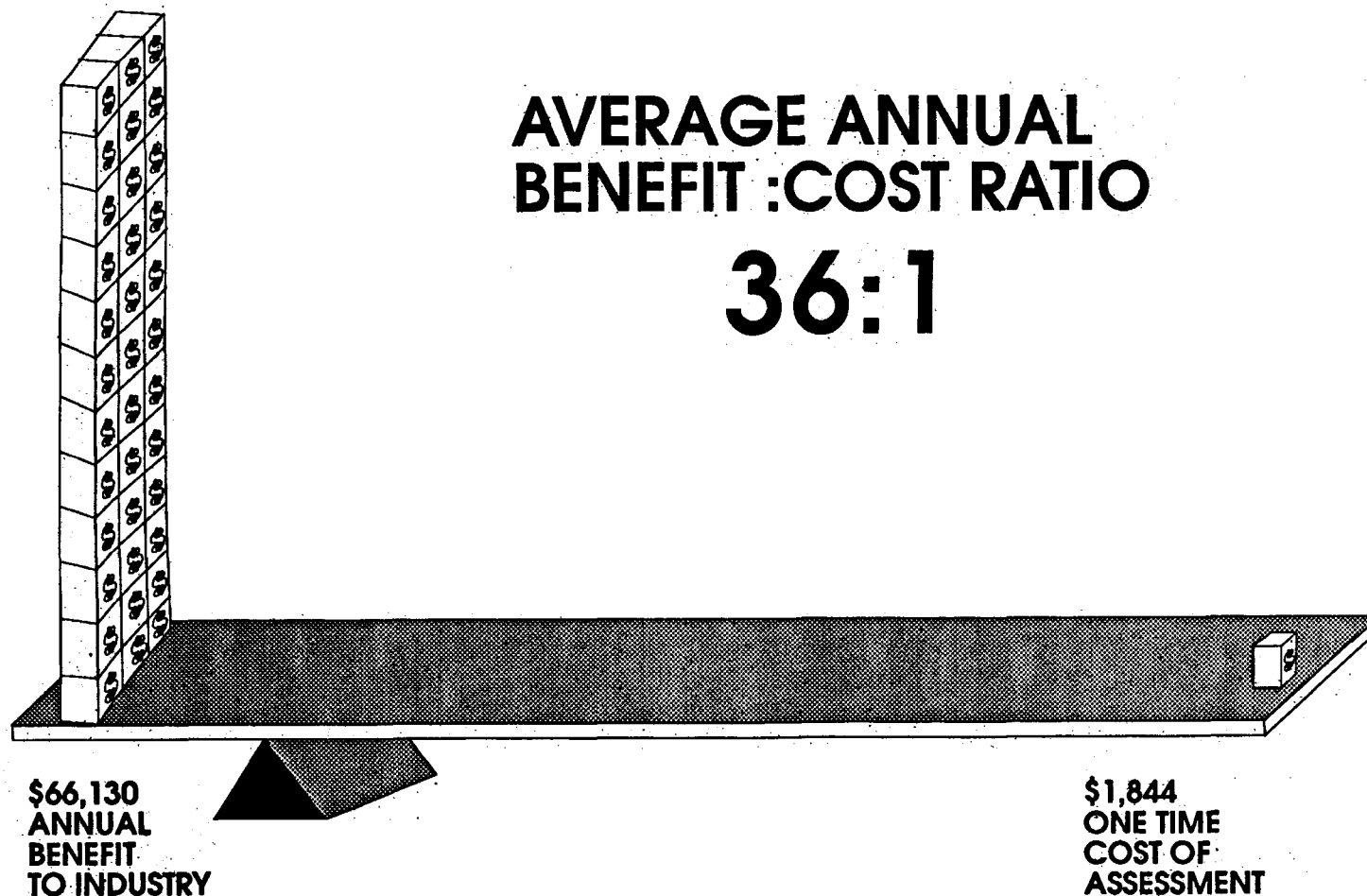
$\$2,380,626 / 27 \text{ audits} = \$88,171 \text{ average annual benefit/audit}$

$\$88,171 \text{ average annual benefit/audit} \times 0.75 \text{ audit/benefit from retirees} =$   
 $\$66,129$

$\$59,000 / 32 \text{ audits} = \$1,844 \text{ average retiree cost/audit}$

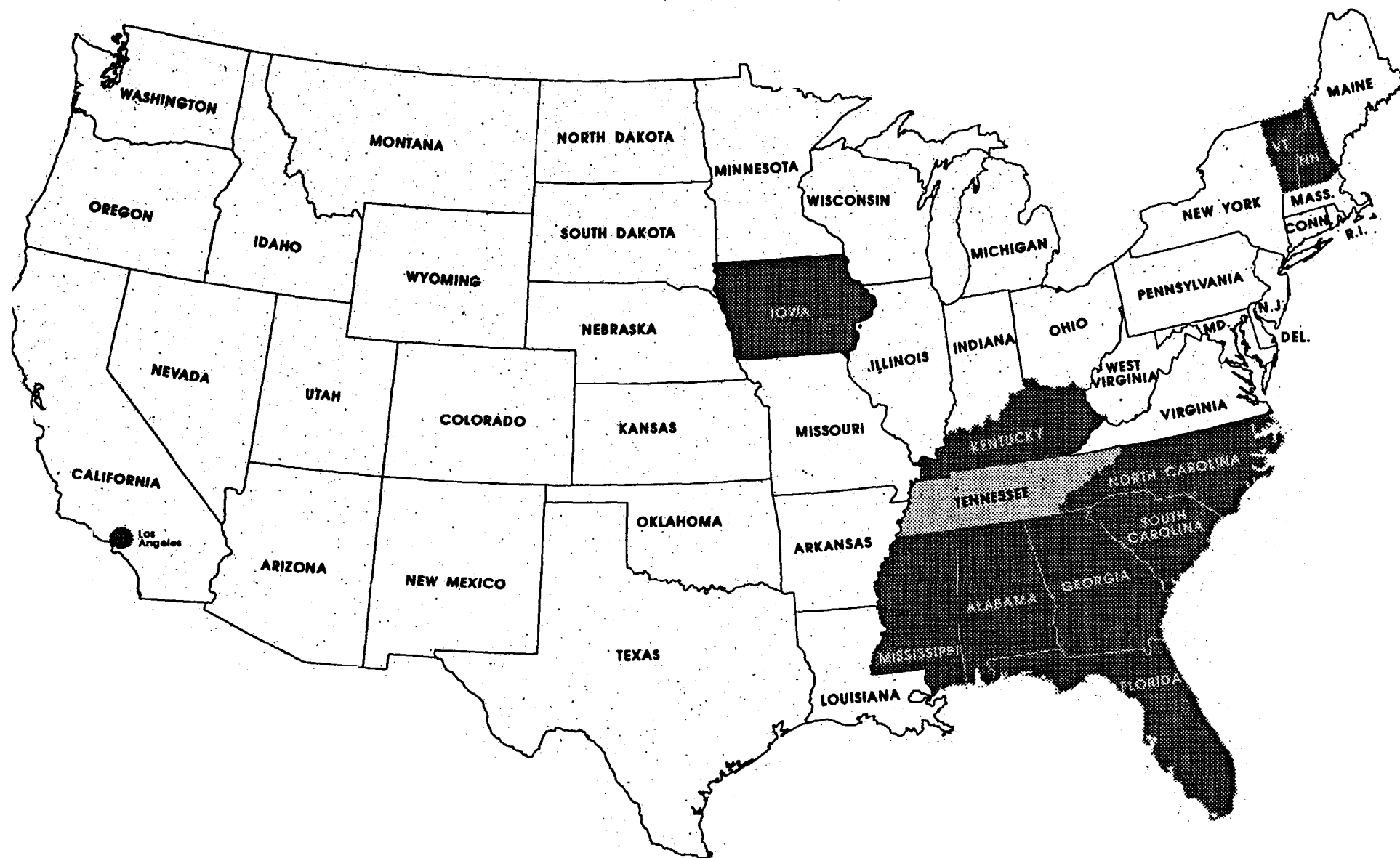
$\$66,129 \text{ average annual benefit from retiree} / \$1,844 \text{ average direct retiree cost}$   
 $= \text{benefit:cost ratio} = 36 : 1$

## Figures

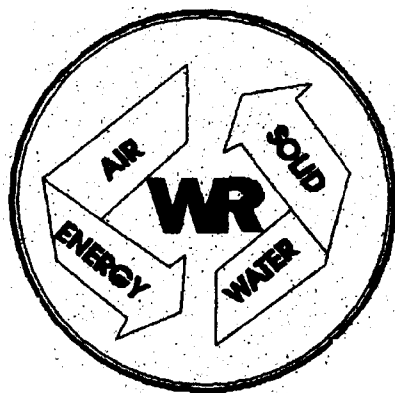


**FIGURE 1. AVERAGE ANNUAL BENEFIT: COST RATIO FOR  
TVA FUNDED RETIREE ASSISTED WASTE REDUCTION  
ASSESSMENT PROGRAM IN TENNESSEE 1989-1992**

**FIGURE 2. WASTE REDUCTION PROGRAMS  
WITH RETIREE ASSISTANCE**







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