

technologies which will make it possible to reduce the generation of wastes at the source, to recycle them back into production, to increase the salvage of useful materials, and to either use or convert into useful materials far more wastes than are used or converted today.

There is at least one more feature of the law which marks its maturity. This is the direction it gives Federal authorities to foster the establishment of waste disposal programs large enough to command resources adequate for the job. Fragmentation of waste disposal responsibilities among small political subdivisions sometimes running to several score in a single county, is common throughout the country and a major reason for technological backwardness in solid wastes management.

The Office of Solid Wastes was established in the Public Health Service to administer the Solid Waste Disposal Act only eight months ago. Since then, the national solid wastes program has been gotten under way in all five of the major areas of activity projected by Congress.

Grants have been made and work is being conducted on 24 research projects to lay a basis of new knowledge for progress in solid wastes technology.

Nineteen projects to investigate or demonstrate new and improved solid waste disposal systems also have received grants and work under them has been started. Several of these projects are expected to help merge small community waste disposal operations into county-wide or regional management districts. **The demonstration projects are testing pilot or operational scale methods and equipment. All work of this kind is authorized to receive up to two-thirds Federal support.**

Public Health Service grants under the national program also are assisting four institutions of higher learning in providing training for graduate engineers in disciplines essential to solid waste technology improvement. The present shortage of trained manpower is critical and an important factor in the technological backwardness.

Administrative and operating personnel are being trained in Public Health Service courses. In addition, solid waste training courses are being prepared under contract with the American Public Works Association.

Statewide solid waste program planning is now getting under way in 14 States under grants covering up to 50 percent of the cost of the work. It is this expanding activity which will help to develop comprehensive planning for the immediate and long-range management of solid waste problems, planning that will give appropriate but often overlooked attention to such factors as the interrelationship of solid waste management with air and water pollution abatement, urban growth trends, land use planning, and the economic and technological advantages of regional solid waste management efforts.

In the fifth area of major activity under the national program, staff and other arrangements have been made in Washington headquarters and field offices to provide local and State agencies technical assistance with solid wastes problems.

Obviously, technological development must be aimed at achieving recognized goals. In the solid waste field, these goals have thus far been expressed in rather general terms—improvement of environmental quality, protection of the public from health and welfare hazards, and improvement in the efficiency of disposal operations. These goals must be translated into solid waste management criteria which can be used as guides by State and local governments for the adoption and enforcement of standards, and by industry for the development of equipment and techniques capable of meeting such standards. The Office of Solid Wastes will undertake the development of such criteria as a major aspect of its program.

The national program intends to give solid waste technology in the United States a potent injection of the spirit of innovation. We want it in our search for new knowledge. And we want it, plus a sense of urgency, in the application of existing knowledge.

As members of this Subcommittee no doubt realize, enough knowledge is available now to significantly advance solid waste management in this country. Some of it has been available for years, yet more than half of our cities of 2,500 or more inhabitants do not yet have sanitary, nuisance-free disposal systems. All large municipalities lack, for example, incinerators incorporating available air pollution abatement technology. The principal retardation factor