

The sensitive art of siting treatment facilities

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Siting of waste treatment facilities includes political, environmental, and engineering criteria. Industry and government are rewriting regulatory guidelines, defining acceptable land areas, and listing specific site criteria in order to establish safer waste facility sites.

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Finding sites for facilities that treat, store, or dispose of hazardous wastes has become one of the most controversial issues facing U.S. regulators, industry, and the public. One reason is that time has shown us that some disposal methods are not safe.

Industry generates approximately 275 million metric tons of hazardous waste each year, according to a 1982 estimate by the Office of Technology Assessment. In the past, both industry and government relied heavily on land disposal. However, a 1982 study by Peter Montague, a Princeton University researcher, revealed that all landfills, regardless of the type of containment and liner system used, eventually will leak. Further, a July 1983 study commissioned by EPA determined that not enough is known about the interaction between liners and certain hazardous wastes to warrant confidence in landfilling beyond the near future.

According to EPA, as many as 17,000

to 22,000 hazardous waste sites in this country will need to be cleaned up in the next decade because they threaten human health and the environment. Cleanup at many of these sites may include excavation of buried wastes for treatment and disposal elsewhere.

It is clear that industry, government, and the public must work together to develop new means to handle — safely — both old and new wastes. Without safe state-of-the-art processing facilities strategically sited near industrial regions, hazard wastes will continue to be stored, landfilled, or simply dumped in ways that will lead to further deterioration of the environment.

Siting regulations

On the Federal level, the 1976 Resource Conservation and Recovery Act (RCRA) regulates the treatment, storage, and disposal of hazardous wastes. Under the Act, in July 1982 EPA promulgated standards for land disposal. However, RCRA controls facility siting only to the extent that EPA approves or denies facility permit applications based on technical soundness. It does not include criteria for locating facilities, except for certain floodplain and seismic restrictions.

EPA currently is developing location standards. While the actual standards

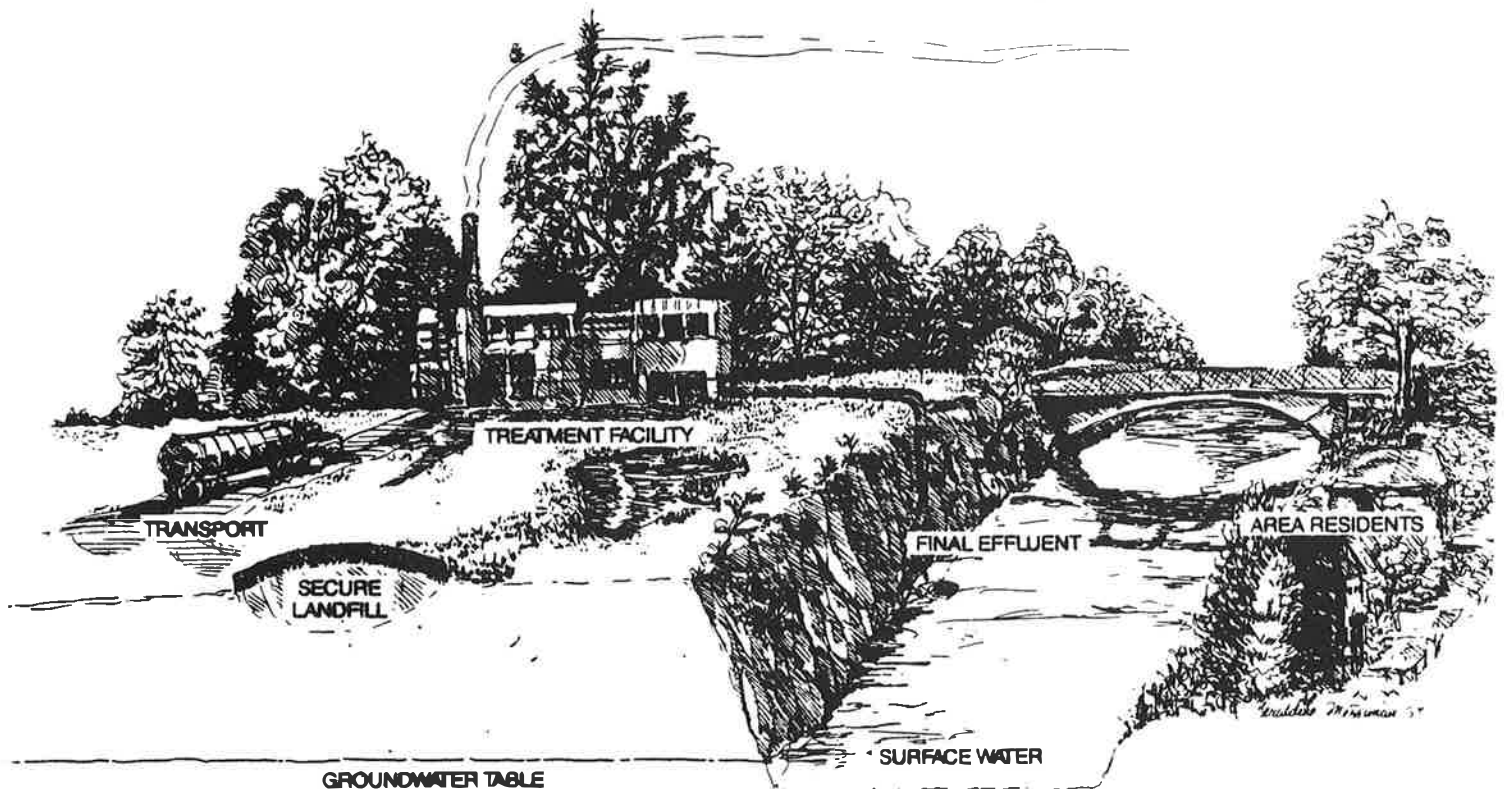


will not be ready to implement until September 1986 at the earliest, the agency was expected to issue guidelines in September 1984. According to Ken Schuster of EPA's Office of Solid Waste, the guidelines will serve as the basis for the eventual standards and as criteria to judge the adequacy of RCRA permit applications until the final standards are issued.

The guidelines and standards will address:

- Unacceptable siting areas. These may include areas where groundwater flow is uncertain or undeterminable, which would preclude the development of effective groundwater monitoring criteria.
- Recharge areas. These may include areas where water flows into major aquifers. Siting in such areas probably will be prohibited.
- Potentially acceptable areas. Schuster says that EPA aims to describe certain types of environmental settings that it may consider appropriate for a hazardous waste management facility. It will attempt to evaluate the major factors of a potential site, such as geological conditions or permeability and how they would be affected by a facility. It then will assign values to these factors and rank them by acceptability or unacceptability scores.

Potential Environmental Impacts



*The road to potential environmental impacts:
From transport, treatment facility, and landfill to the
air, surface water, and groundwater table.*

Once EPA issues final standards, states can issue their own standards, which must be at least as stringent as the agency's, or they can let the agency enforce the national standards. However, EPA prefers that states develop and manage their own programs. In fact, on the state level, at least 25 states currently have their own statutes governing siting. These laws vary in their siting process requirements, location criteria, preemption over local rules, and incentives offered to host communities. Other states have taken a passive role, waiting for developers to propose facilities at locations they have chosen. Gregor McGregor, of McGregor & Associates, a Boston law firm that specializes in environmental and municipal issues, suggests that states probably will have greater siting success if they determine where facilities are needed and then encourage qualified developers to operate facilities at these locations. State officials find themselves in the unenviable position of trying to encourage industrial development by ensuring that their states can handle wastes, while trying to

satisfy local constituents by not threatening them with the prospect of hazardous waste management facilities.

On local levels, siting often is complicated by local zoning laws and home rule powers. An important issue to consider is whether state laws override municipal land use bylaws and zoning ordinances. State siting laws sometimes do not address the issue of preemption and therefore invite litigation between municipalities and states. On the other hand, local bylaws can be drafted to set objective site standards for industrial and commercial uses, thereby ensuring local control over the criteria governing facilities, but not seeking to ban them outright.

General concerns

The potential impact of a hazardous waste management facility on human health and the environment depends on various factors. They include:

- Waste characteristics.
- Waste management methods.
- Design and operation of the facility.

- The location of the facility in relation to population, surface water, groundwater, and sensitive environmental areas.
- Site hydrology, geology, topography, and climate.
- Mitigation methods.
- Other paths for pollutants to enter the environment.

Before allowing a state or developer to site a facility in their community, citizens want proof that these factors have been addressed thoroughly. They also want proof that their community is the best location for a facility, that the developer is trustworthy; and that the facility will operate safely. But even if such assurance is provided, the siting process remains more political and emotional than technical. Today no one wants hazardous wastes in his "back yard." The question becomes: How can government and industry gain the trust of the public and successfully site a waste management facility?

Choosing suitable land areas

Developing generic siting standards