

SECTION III
FUTURE HAZARDOUS WASTE MANAGEMENT
ISSUES AND ANALYSIS

Chapter 6
MAJOR FACTORS AFFECTING FUTURE
HAZARDOUS WASTE MANAGEMENT

In this chapter, the major issues and trends are addressed by three main questions:

- (1) What will be the pattern and extent of Alameda County's growth and development?
- (2) How will future hazardous waste management improve over present practices?
- (3) What will be the demand for new offsite facilities to manage hazardous wastes?

A. ECONOMIC GROWTH

The extent, type, and manner in which Alameda County's economy changes over the next dozen years will affect hazardous waste management problems and needs in the County. For example, the biotechnical industry has expanded rapidly in Alameda County in recent years. This may affect the type and amount of hazardous waste generated. New industry may also find ways to minimize waste as a way of reducing expenses.

The mix of industry types as well as the mix of new versus old will also influence the hazardous waste system here. These mixes are important because there is greater opportunity for new firms—or significant expansions at existing ones—to adopt improvements in their hazardous waste practices. Such improvements may stem from two sources: first, new construction can incorporate technical improvements to reduce waste generation; this may be more difficult or costly at older facilities. Second, new firms may be required to adopt even more aggressive waste reduction measures as a condition of receiving their local business permits.

B. HAZARDOUS WASTE MANAGEMENT CHANGES

Future hazardous waste management will depart radically from the way hazardous wastes were handled in the past. Greater knowledge of how to manage hazardous materials and wastes, greater regulatory scrutiny, and increasingly strong economic incentives should significantly reduce future contamination. Yet, it is likely that additional contaminated sites will be discovered, adding to the volume of wastes requiring treatment and disposal. With the emergence of new and more effective

technologies, SARA's (Superfund Amendments and Reauthorization Act of 1986) demand for site remediation may be especially suited to onsite cleanup. Here, bioremediation and mobile incineration may prove to be quite effective, thereby reducing the impact of contaminated soils and perhaps other types of wastes on offsite hazardous waste management facilities in Alameda County.

As noted earlier (particularly in Chapters 1 and 2), public attitudes play a critical role. A gradual reduction in the level of fear about toxics, often termed "chemophobia," can be expected as a result of greater public education and understanding about hazardous materials and waste management. Greater public awareness of such issues also leads to demands for new approaches to toxics management. These include public pressures to significantly reduce (or even eliminate) the use of toxic substances and reduction of other wastes at the source--thereby significantly reducing, and for some potentially eliminating, the need for new offsite treatment, incineration, and residuals disposal facilities.

Future hazardous waste management may also be affected by new regulatory developments. Some will arise in response to the emergence of new technologies, or approaches such as seen already in mobile treatment. Other regulatory changes will take place as a result of greater awareness of the extent of problems (as in the growth of the federal Superfund from \$1.8 billion in 1980 to \$9 billion in 1986), or in response to heightened public pressures. A trend toward even more stringent regulations in the future is expected. On the other hand, the ability of government agencies to more carefully craft regulatory approaches to reduce their burden, while improving the level of protection is also expected to increase. For Transportable Treatment Units (TTUs), EPA has suggested relaxing somewhat the rigid permitting requirements that are imposed on large treatment and disposal facilities, in order to encourage greater use of TTUs.

C. DEMAND FOR NEW OFFSITE FACILITIES

Currently, the largest proportion of hazardous wastes generated in Alameda County are disposed at offsite land disposal facilities. What alternatives to land disposal are needed? Where can and should these facilities be located? For whom shall they be built? By whom?

These questions are central to this Plan, and are addressed in subsequent chapters on waste stream projections, facility needs assessment, and siting criteria. However, future demand for new offsite facilities depends on the type and size of firm being addressed. The following forces influencing different kinds of firms and their responses, in general terms.

Large companies, especially those experienced in chemicals handling and production, are driven by economic goals, liability, concerns, and, to a lesser extent, regulatory pressures. In Alameda County, about 10 firms account for 25 percent of the total waste stream; another 60 or so firms account for another large portion of all hazardous wastes. Together this group of largest generators account for 50 to 60 percent of all manifested wastes. Rapidly rising costs for hazardous waste management, especially offsite; great potential liabilities for cleanup of disposal sites; and regulatory demands for waste minimization are pushing these firms rapidly to source

reduction and onsite treatment. This trend appears to be well underway. Companies may also feel public pressure to continue waste reduction. A positive corporate image is a critical asset. These firms, while they were once major waste generators, and accounted for the largest volumes of manifested wastes, are moving away from the need to use offsite facilities making projections of the future based primarily on 1980's manifest data inaccurate.

Many medium-sized companies have also begun to feel the pressures of economics, liability, and regulation. In Alameda County 700 medium size generators account for the remaining 40 to 50 percent of the wastes included in the manifest system data. Their waste management costs are growing rapidly. These firms may change and adapt to these pressures somewhat more slowly than their larger colleagues. They may require government assistance. Their demands for offsite hazardous waste management facilities are not easily predicted. In the short run, these demands are likely to increase as land disposal is phased out; but they should decline as these firms, too, adapt and are able to implement greater source reduction and onsite treatment.

Smaller firms will have the greatest difficulty responding to the new set of pressures. Many appear to operate outside of the hazardous waste management system today--possibly out of ignorance of their need or of their ability to comply. Instead, these firms are driven by economic forces; liabilities far less of a factor compared to large firms. They are far less likely to practice onsite treatment. In Alameda County nearly 7,000 small firms not using the manifest system are estimated to account for about one-third of total wastes, and some 22 percent of hazardous wastes when waste oils and recycled wastes are excluded. In the near term, these firms may add to the demand for offsite facilities, as their hazardous wastes enter the system for the first time. Their total contribution to the county's waste stream appears to be small.

Smaller firms often lack the experience with chemicals and waste management to institute a great deal of source reduction. But they may be encouraged by good will and a desire to achieve a healthy environment, provision of information or training, or banks conditioning loans or insurance companies offering premium discounts for complying with waste audits.

A household hazardous wastes education or collection effort may divert some of these materials from Class III refuse disposal sites to recycling, treatment (or Class I) facilities.

The situation reflects pressures to reduce the demand for offsite hazardous waste management facilities, with a much smaller counter-demand for increased handling of hazardous wastes offsite. The former pressures discourage development of those offsite facilities needed to manage the wastes not eliminated by source reduction or managed onsite by larger generators, plus those of smaller generators and households.

The problem is potentially very serious: many land disposal deadlines may be extended if sufficient alternative capacity is not available. Market demands will determine capacity--and be defined by its availability (or is absence). The solution is to disaggregate the waste stream analysis and, especially, the implementation strategy. The priority called for in the plan's policies is on source reduction, then onsite recycling and treatment, especially by larger generators. These priorities may apply differently to different waste streams.

Facility development is likely to require a greater public sector role. This could take three forms. First, because of the uncertainty surrounding the demand for offsite facilities by large generators and the trend towards greater onsite management, some offsite facilities may be sized to meet regional needs. This will be facilitated by inter-county cooperation on siting large offsite facilities. This approach reflects an understanding of economic realities affecting the future of the county's waste stream and the sizing of offsite facilities to meet economies of scale, with a recognition that it necessitates greater transportation distances, as one or more facilities is likely to be more removed from the county's sources of hazardous waste generation. Secondly, other facilities--transfer stations, for example, and stabilization units, plus transportable technologies--will be sized and sited primarily to meet local needs. Third, the possibility of public sector involvement in meeting the offsite facility needs of small generators and households should be considered. This may also be true in the case of residuals repositories for all generators.