

The Rising Cost of Waste Disposal

by Arthur H. Siegal

The vast majority of residents in southeastern Michigan do not appreciate the ever-increasing cost of the proper disposal of the solid waste they generate. Households in metropolitan Detroit, for the most part, never see waste disposal costs separate from those of other municipal services provided by the city or township in which they live. Residents and businesses in rural areas are more often charged directly for the disposal of the waste they generate.

The cost of waste disposal is driven by numerous factors, two of which are the subject of this article. First, the increasing regulation of solid waste disposal in Michigan; and second, limitations imposed on landfill operators that prevent them from marketing their services to the broadest possible number of consumers, widely distributing the cost to construct and operate a landfill and preventing them from competing with other landfills.

Regulations

In 1965, the State of Michigan enacted the Garbage and Refuse Disposal Act, 1965 PA 87, as amended, MCL §325.291 *et. seq.* ("Act 87"), which was intended, along with the Resource Recovery Act, 1974 PA 366, as amended, MCL §299.301 *et. seq.*, to provide as comprehensive a framework as possible for the management of solid waste in the State of Michigan. These early acts obligated each Michigan county to analyze and predict their solid waste disposal needs for incorporation into a state solid waste management plan. MCL §299.308, 299.312, 325.297b. In 1978, in response to federal amendments to the Solid Waste Disposal Act, USC §6901, *et. seq.*, Michigan enacted the Solid Waste Management Act, 1978 PA 641, as amended, MCL §299.401 *et. seq.* (Act 641). Act 641 was intended to build on the state's experience under Act 87 and to address issues raised by

federal legislation and regulations with respect to solid waste. Act 641, as it was enacted, provided for the permitting, licensing and regulation of solid waste disposal areas;¹ the regulation of parties transporting solid waste and the development of county solid waste management plans, expanding on the concept begun with the Resource Recovery Act and Act 87. Following the adoption of Act 641, the Michigan Department of Natural Resources (DNR) promulgated a number of rules that govern, among other things, the design, construction, operation, closure and post-closure maintenance of sanitary landfills. MAC R 299.4101-299.4807. This fairly comprehensive set of regulations is still in force today.

The intent and effect of Act 641 and the Act 641 rules ultimately was to upgrade the construction, operation and monitoring of solid waste landfills, driving up the cost of disposal in return for improved environmental protection. As a result, the number of landfills in the state has dropped substantially, as small township "dumps" were closed and/or consolidated into larger municipal landfills.² Between September 1988 and January 1992, the number of licensed and open Michigan landfills decreased by 16 percent.

The state rules provide specific criteria for the design and construction of landfills including a requirement that a landfill built on natural soils, without additional modification, be developed only over 10 feet of relatively impermeable clay having a permeability of no more than 10⁻⁷ centimeters per second. This means that water moving through the clay would take at least one second to move .0000001 centimeters, or about 116 days to move 3.3 feet. An "engineered" landfill must be constructed over either a minimum of three feet of relatively impermeable compacted clay; a synthetic liner at least 20 mils thick over two feet of soils compacted to a

permeability of at most 10⁻⁶ cm/sec; or a synthetic liner at least 30 mils thick placed on native soil. MAC R 299.4307. These and other standards increased the cost to dispose of solid waste in Michigan. See *e.g.*, *Delta County v DNR*, 118 Mich App 458 (1982) and *Livingston County v Dep't of Management and Budget*, 430 Mich 635 (1988). No longer could anyone simply dig a hole or use an existing hole and fill it with waste. A number of old landfills were built on the sites of quarries or other mining operations, which today are considered unsuitable for use as a landfill without substantial modifications because the soils underlying the sites are relatively permeable.

Since 1982, when the current Act 641 rules were adopted, the DNR has taken an increasingly strict view of the rules' design standards. Over the years the DNR has taken a stronger position that these design standards are only minimums and it can require additional engineering and construction work be done before a facility will be licensed. In fact, a large number of recently issued Act 641 construction permits are for sites that have at least two synthetic liners (something not required by the Act 641 rules) and in many cases have two separate layers of clay in addition to two synthetic liners.⁴

In 1988, the U.S. Environmental Protection Agency (EPA) proposed adopting national uniform landfill design, construction, operation and closure standards. 53 *Fed. Reg.* 33314-33422 (Aug. 30, 1988). The 1988 proposal originally focused on using a complicated risk assessment method to evaluate proposed landfill designs. Rather than imposing a minimum design as do the present Act 641 rules, the EPA proposed to provide a formula or series of formulae under which a proposed design would be evaluated. If the landfill design satisfied a certain upper limit on risk to the environment, it would be

approvable. That proposal evolved following a series of comments from both the regulated community and state level regulators. In anticipation of new federal regulations that would be more specific than the 1988 proposal, and utilizing the modified designs that the DNR has been demanding for permitting new landfills, the state agency set about developing its own revised rules package to replace or supplement the current Act 641 rules.

On October 9, 1991, the EPA formally promulgated its so-called Subtitle D regulations for municipal solid waste landfills. 56 Fed. Reg. 50978-51119 (Oct. 9, 1991 to be codified at 40 CFR §257, 258). These regulations are extremely complicated but, in many ways, parallel the current Act 641 rules. Two significant differences between the new Subtitle D regulations and the current Act 641 rules are that, under the federal regulations, all new landfill units and lateral expansions must be built using a composite liner, 56 Fed. Reg. 51021. If a landfill site has no native clay, this would significantly increase the cost of construction. The requirements for closing a landfill appear relatively innocuous, *Id.* at 51028, however, it has been widely rumored that the EPA intends to construe the federal requirement that a landfill's cover be as impermeable as its bottom liner to mean that if a landfill has two composite liners, it must have two composite covers. This would far surpass the current requirements of Act 641, MAC R 299.4305(10), further driving up the cost to operate a landfill.

The new federal regulations provide three mechanisms by which the requirements that the regulated community must comply with are determined:

(1) A state may prepare its own regulatory program which may exceed, but not lessen, the protection of the environment provided by the Subtitle D regulations and seek EPA approval of its regulatory package. Once that approval is given, the state is responsible for enforcing its regulatory program. 51 Fed. Reg. 50995.

(2) In the absence of state program approval by the EPA, at a minimum, each municipal solid waste landfill is obligated to comply with the Subtitle D regulations. *Id.* This may cause problems in one of two ways: a) a landfill may be subject to requirements under Act 641 rules and Subtitle D regulations that conflict;⁵ or b) certain landfills may not satisfy the Subtitle D requirements but may protect the envi-

ronment, such as older sites that were constructed on a substantial amount of clay, but which may not include a plastic liner, or sites in Northern Michigan that were constructed using alternative materials that the EPA has not approved. Any party operating a landfill that does not satisfy the requirements of the Subtitle D regulations is potentially subject to a citizen's suit. *Id.* This could be a significant risk.

(3) To address the second concern expressed above, the Subtitle D regulations do provide a mechanism by which a party in a state that has not obtained EPA approval of its state program may request its state to review a proposed design for a construction item that varies from the Subtitle D regulations' requirements and determine that it provides protection of the environment equal to the standard design imposed by the regulations. That conclusion is then forwarded to the EPA for its concurrence. It is very unlikely that such a proposal would be reviewed in any sort of timely fashion, given the number of landfills throughout the country and the limited numbers of EPA staff available. For that reason, the EPA is pressuring the states to adopt programs and submit them for approval.

As noted, private citizens may also enforce the regulations by the use of citizen suits. 56 Fed. Reg. 50995.

The DNR has expressed reluctance to accept responsibility for enforcing the federal program but, as noted above, has begun work on developing its own revised set of rules. This spring, the DNR released a draft set of rules to be promulgated under Act 641. This draft followed previous discussion drafts presented to industry and county regulators for comment. The DNR staff in charge of this project have decided to convene "work groups" from industry, the regulated community and others to address concerns raised by the draft rule package. The last publicly released draft of the rules provided that all new general municipal solid waste landfills could be built with either: (A) two composite liners with two systems to collect liquid percolating through the waste; or (B) three liners and three collection systems but no clay. There are similar improvements in the design required for non-hazardous "Type III landfills" that generally accept construction and demolition waste and/or wastes of a similar nature that have a low potential to impact the environment.

Limitations on Operators

As noted previously, Act 641 imposes a requirement that each county develop, either on its own or with other counties, a county solid waste management plan intended to assist the counties in assuring that they would have sufficient capacity to dispose of the solid waste the county generates over five- and twenty-year periods of time. MCL §299.425(1). In 1988, the Michigan legislature amended Act 641 to also provide that waste could not be moved into or out of a county unless the county's solid waste management plan explicitly authorizes it to do so. MCL §299.413a; 299.430(2). For waste that would be leaving one Michigan county and entering another, that service had to be explicitly authorized in the solid waste management plans of both the receiving and the sending county. *Id.* While this requirement has likely had a salutary affect on true solid waste management planning throughout Michigan, it has also had the perhaps unintended effect of creating some artificial market monopolies and limiting competition between disposal options in different counties. A number of counties with available disposal capacity have chosen to hoard it, encouraging their neighbors to develop their own. Such actions usually ignore the regional patterns of waste management that existed before Act 641 was amended. *See, e.g.,* the actions of St. Clair County that led to *Fort Gratiot Sanitary Landfill, Inc. v DNR*, ___ U.S. ___ (1992), in which the U.S. Supreme Court recently invalidated Act 641's limits on the acceptance of out-of-state waste as a violation of the U.S. Constitution's Commerce Clause. That decision might place even more pressure on Michigan's waste management system, although it does allow landfill owners to spread their costs over a larger number of consumers.

Allowing those counties with disposal capacity to deny their neighbors use of that capacity may be expected to drive up the cost of disposal for both the neighboring counties and the host county. Modern landfills are expensive to develop. With limited waste to support that cost, the price per unit of waste received may be expected to rise.

As landfill space has become more scarce, host counties have made it more difficult for operators to construct new landfills or expand existing ones. Combining this factor with the counties' ability to deny their neighbors access

seems to be pushing Michigan into either an unnecessary "solid waste crisis" or into such a crisis more rapidly than it might otherwise occur.

In recognition of this "crisis," the DNR is currently working with representatives of various counties on revising the process by which Michigan plans to manage its solid waste and the standards for what its plan must include. The focus of that work is beginning to narrow and the process is beginning to speed up. Meetings held with representatives of interested counties in October identified issues falling into five major categories: 1) local versus regional planning; 2) the overall planning process; 3) intercounty transportation of wastes; 4) the facility siting process; and 5) recycling.

The counties suggested clarifying and simplifying the planning process and placing additional responsibilities on DNR staff, such as preparation of a guidebook for plan preparation and requiring that the DNR provide information that could be "plugged into" county solid waste management plans across the state. The counties have also recommended that: A) time lines for plan development be shortened; B) a "fast track" process for plan amendment possibly be developed; and C) the 20-year planning period be reduced to 10 years.

With respect to recycling, the counties and the DNR want: A) additional authority and state-mandated recycling; B) 1989 PA 138, codified at MCL §124.508a, to be amended to provide "an enforceable means of collection of the surcharge" that act provides for; C) DNR assistance in identifying alternatives and methods for achieving recycling goals; D) county authority to license haulers; and E) subsidization of the use of secondary materials to create markets for those materials.

The counties do recognize that local wastesheds are dynamic and that using these dynamic wastesheds within a static planning program is problematic. The counties also recognize that current regulations increase the cost of constructing and managing a modern landfill and that such landfills, therefore, require larger volumes of waste to support those costs. While there appears to be recognition that regionalization is advisable, the counties have traditionally jealously guarded their authority.

In response to a concern about inconsistent DNR decisions on planning and enforcement and the general

politicization of the local solid waste management process, the counties lamented that full responsibility for solid waste planning and plan implementation is imposed on the counties but that the counties do not have complete authority or financial responsibility for planning or waste flow.

With respect to funding, the counties have demanded state participation through planning and implementation grants and creating new, and improving existing, funding mechanisms, including impact fees and surcharges. Another suggestion was that Section 34 of Act 641, MCL §299.434, be amended to require the operators of landfills and municipal incinerators to fund the state planning grant program by imposing an additional surcharge of a specified amount of money for each ton or portion of a ton of solid waste that is disposed of at either the landfill or the incinerator. Gov. John Engler recently eliminated funds for this purpose from the state's budget, leaving the counties to fund the planning activities required by Act 641.

In December 1991, the DNR and the counties decided to focus their efforts on developing: 1) a funding mechanism to support state and county solid waste management planning and plan implementation activities; 2) a comprehensive statewide solid waste database to support planning; and 3) faster, less cumbersome procedures to promulgate local amendments to solid waste management plans to enable greater flexibility in responding to changing conditions.

Given these foci, it is not clear that the DNR and Michigan's counties understand that their actions may have had the unintended effect of driving up the cost of waste disposal unnecessarily.

Only the last of the three foci even approaches addressing the impacts that Act 641 has had on the waste management economy and it appears to leave in the hands of the county government, the formerly private decision of which customers a landfill should service.

Conclusion

As noted, the heavy regulatory burden on landfill owners and operators is increasing because of recently adopted federal regulations and may be expected to increase further as the State of Michigan imposes new rules. It is not clear how much new environmental protection will be gained through adherence to these new regulations. The current Michigan regulatory scheme has been in place for barely more than 10 years. A number of landfills that have been the source of problems actually began operations before Act 641 was enacted and so the degree of success resulting from adherence to the current Act 641 standards is unclear. One thing that is clear is that at the same time that the cost of constructing, operating, closing and maintaining a landfill is increasing, the state has tried to curtail the markets available to landfill operators. The result of the combination of these two factors appears to be increased costs to the consumer.

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- 1 The term solid waste "disposal area" is defined to include landfills, transfer facilities, processing plants (including resource recovery facilities and certain incinerators), or other solid waste handling or disposal facilities utilized in the disposal of solid waste, MCL §299.404(4). Although the other types of facilities are relevant and will be touched on in this article, the primary focus of this article is on landfills because they have been, and will likely continue to be, the primary method by which solid waste in Michigan has been disposed of. See e.g., Emilia Askari, Great Lakes panel pushes closing of incinerators, *Detroit Free Press*, Mar. 31, 1992 at A3.
- 2 This process of closing small local landfills has continued until very recently. For example, in late 1990, DNR executed consent orders with 16 Michigan townships and one municipal authority under which 15 separate township dumps were to cease operations on December 31, 1990.
- 3 A mil is .001 inch

- 4 A so-called "composite" liner is made up of a synthetic liner combined with or laid on top of a clay layer that is either naturally occurring or constructed. See e.g., 40 CFR §258.40(b).
- 5 For example, under both Act 641 and the Subtitle D regulations, landfills are required to sample groundwater downgradient of the landfill. MACR 299.4305, 299.4315(15); 40 CFR §258 Subpart E. Under Act 641, DNR has directed landfills to report their groundwater monitoring results with respect to the dissolved portion of the sample as opposed to the total sample. Under the Subtitle D regulations, however, a landfill is required to report its groundwater monitoring results of the total sample. This may subject the landfill operator to a double expense of sampling and analyzing its wells for the same parameters twice, when once would clearly suffice. This is just one example of the many possible conflicts between the Act 641 rules and the Subtitle D regulations.

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