

# COLUMBIA UNIVERSITY

IN THE CITY OF NEW YORK

## EARTH ENGINEERING CENTER

Comments on NYC's Solid Waste Management Plan: Residential Waste Export

Before the New York City Council  
Committee on Sanitation and Solid Waste Management  
February 1, 2005

Good morning. My name is Benjamin Miller. I am a research associate at Columbia University's Earth Engineering Center and I am providing these comments on behalf of the Center.<sup>i</sup>

There is much in the residential waste export portion of the Solid Waste Management Plan that deserves applause.

- Most importantly, by creating defined wastesheds that limit the crucial distance waste will travel between the end of the collection route and the transfer point, the City will achieve a dramatic reduction in costs and adverse environmental impacts. However, by restricting wastesheds to reflect the politically expedient constraint of "borough self-sufficiency," the City may not achieve the greatest feasible reductions in truck miles, costs, and environmental impacts.
- Another salutary feature of the residential export plan is the proposed use of four City-controlled transfer facilities. By maintaining municipal control over this crucial infrastructural link, the City will increase the likelihood that it will be able to maintain some control over future price increases. However, to the extent that the City proposes continued reliance on privately controlled transfer stations for five of its proposed wastesheds it increases its vulnerability to uncontrolled price increases on the part of the private waste-management industry. In establishing contracts for the long-term use of these facilities, the City should insist on the right to take over the facilities, at fair market value, at the end of the contract term, if it is in the City's interest to do so in order to provide more competitive bids or so that it can operate them itself it is more cost-effective to do so.

There are other things the City could and should do to reduce the long-term costs and adverse environmental impacts associated with exporting waste for disposal outside the city limits.

In prior testimony (given on December 20, 2004 and January 18, 2005), we have stressed the importance of *measures to reduce the amount of waste that requires disposal* by increasing waste prevention efforts. The single most effective means for achieving this is through a "save-as-you-throw" system,<sup>ii</sup> whereby homeowners' current property taxes would be reduced by the amount that is currently spent on waste management, and

householders might instead buy special bags to pay for exactly as much waste as they generated—thereby avoiding the unfairness associated with subsidizing their neighbors' wasteful habits and allowing the possibility of saving money by being careful about the waste that they themselves throw away.<sup>iii</sup>

The City should also prohibit immediately the disposal of grass clippings. The recently released results from the preliminary waste composition study conducted last May show that “leaves and grass clippings” are the fifth-largest waste component, constituting over 5% of the overall City waste stream (over 3,700 tons per week).<sup>iv</sup> Since this sort was done during the last two weeks of May, the great majority of this material is likely to have been grass. Requiring residents to “leave it on the lawn” or compost grass clippings would save millions of dollars a year.

We have also stressed the benefits that developing *new in-vessel composting capacity* could have for the disposal of source-separated kitchen waste generated by institutions and restaurants.

The comments that follow pertain to the remaining residential waste that will be transferred for disposal outside the city. They involve recommendations concerning (a) transfer logistics, (b) transport arrangements, and (c) disposal management and methods.

*Concerning transfer:*

- There may well be more efficient and cost-effective transfer options that do not involve containerizing waste.

One such—the use of centralized enclosed barge unloading facilities that would avoid the need for expensive retrofits to marine transfer stations, which would be located in one or more of the boroughs (or in a New York City-controlled facility outside the city) in a place where there is rail access—has already been rejected because of the politically imposed constraint against moving garbage between boroughs, despite the cost advantages it would offer and despite the fact that such a facility could be designed and operated in a way that would not impose adverse impacts on local populations. However there are other options that may also offer operating and cost advantages over containers. One of these, which has been proposed by a number of rail-industry experts, may be the use of high-sided gondola cars mounted on barges or rail floats, which could be pulled directly onto rail lines across float bridges, thus avoiding the need for a secondary transfer facility that would pick up the containers and put them on rail cars. This might also reduce the costs of retrofitting the marine transfer stations.

*Concerning transport:*

- It will be more cost-effective, and will increase the number of competitive disposal options available, if the City directly procures rail transport services rather than contracting with the disposal vendors for transport.

One of the greatest factors affecting the pricing and availability of rail service is dependable volume. By aggregating all of its own demand—plus the private carter waste that is transferred at the West 59<sup>th</sup> Street MTS and at other transfer facilities run by or on behalf of the City—the City will have much more negotiating clout than would any individual waste management firm, not to mention the leverage that the City of New York, as an important governmental entity, would bring to the negotiating table. Apart from eliminating the waste-contractor's railroad markup, this will translate into cheaper prices for the transportation itself—one of the most significant cost factors in the export equation—as well as increase the number of landfills to which the City will have access (since smaller landfill operators are not equipped with the experience or the clout to negotiate effective rail service contracts), which will make the disposal part of the equation less costly as well.

By contracting directly for transportation services, the City can also increase its control over strategic factors that directly affect transport costs. For example, waste leaving the Bronx en route to the Brambles landfill in Waverly, Virginia is hauled north to Selkirk, New York (just south of Albany) to cross the bridge across the Hudson. From there it is hauled south to Virginia. All of this hauling is done by CSX since CSX either owns that track or has trackage rights over it. However, for the last 25 miles of the journey, from the CSX track east to Waverly, the cars must travel on Norfolk Southern rails. Because the landfill is a captive NS customer, and because the distance the cars are hauled by NS is very short, this part of the trip, relative to the rest of the trip, is quite expensive. If, however, the waste were shipped across the Hudson on rail barges or on high-capacity ferries,<sup>v</sup> the cars could ride all the way to Waverly on NS tracks, which would enable the City to cut a more cost-effective deal with NS. Besides offering negotiating leverage, this option would have the critical advantage of getting these trains off passenger routes, thus eliminating competition for available slots and freeing up that capacity for higher-value freight, as well as reducing congestion on the heavily travelled River Line that runs from Albany to New Jersey.

To get the greatest benefit, the City must negotiate direct contracts with both of the major railroads serving New York City, the CSX and the Norfolk Southern. By using its leverage with these railroads jointly, the City could not only achieve the most competitive deals, but could induce the railroads to interact in ways that benefit the City—for instance, by offering the rights to use each other's track in appropriate circumstances rather than insisting on expensive interchange arrangements.

By negotiating directly with the railroads, the City could also use its clout to improve rail operations—to get the best people and the best equipment to produce the greatest turn-around rates and to fit most efficiently within the region's dense passenger rail system. It could also use its leverage to ensure that other elements of its waste-management system—for instance, the recyclable commodities processed by Hugo Neu and Visy—are given the best and most cost-effective rail service.

Perhaps even more importantly, City control over rail freight contracting would allow the City to use the strategic advantages of its enormous and stable waste export demand to

improve the city's overall rail freight service, thus helping to provide very significant environmental and cost benefits for all residents and businesses in the city. The city's demand for waste export, for example, could help support the rail freight tunnel across the Hudson that would eliminate the need to haul cars on a 240-mile detour to Selkirk, thus opening the city and New England to the significant rail freight volumes that could then flow between the Southeast and New England.

*Concerning disposal arrangements:*

- The City should take immediate steps to secure publicly controlled disposal facilities. In earlier testimony we have talked about the dangers of relying on out-of-state export. One model that the City might want to consider to achieve this is the kind of state authority that is used in CT, RI, DE, and many sub-state regions. These states and regions, recognizing that the only effective way to control waste disposal prices in the face of an oligarchic private market is to have access to publicly controlled waste disposal capacity, have created solid waste management authorities that offer competitive and predictable rates for both businesses and residents.

In Rhode Island, for example, the self-sustaining waste-management system charges municipalities only \$32 a ton for waste disposal, while private haulers—whose higher payments subsidize the state's aggressive recycling program—pay only \$42 to \$58 per ton.<sup>vi</sup>

In 1905, the New York State legislature gave New York City the power to acquire upstate watersheds to protect its drinking water supply (and to use in providing clean drinking water to any community within those regions that wanted it). In so doing, it assured New York City of the world-class drinking water it has come to depend on. This may be an appropriate model for making sure that New Yorkers have a similarly reliable waste-management system.

*Concerning disposal methods:*

- The City should take immediate steps to develop waste-to-energy capacity, either within the context of a larger solid waste management authority or outside it, either publicly owned or privately owned, within the city or outside it. Although there are a number of technologies that fall under this general heading, ranging from mass-burn combustion to refuse-derived-fuel to gasification, the advantages they all share over landfilling are
  - That it is likely to be able to be sited closer to the city, so that the costs and environmental impacts of long-distance transport are greatly reduced;
  - That it produces fewer emissions of environmental and public health concern;

- That it will be less expensive.

In prior testimony we have talked about the increasing costs of landfilling, due in large part to the structure of the private waste-management industry and the fact that a handful of companies control most of the country's available landfill capacity. While there is a finite amount of land in the world available for landfilling, waste-to-energy capacity is a renewable resource (since WTE plants can be maintained or rebuilt on the same piece of land). And by capturing the energy value of another renewable resource, garbage, WTE reduces the need for burning non-renewable fossil fuels. This is why the European Union has directed that the landfilling of combustible materials cease within the decade<sup>vii</sup> and why China in recent years has built over thirty waste-to-energy facilities. Since 1996, there have been over 160 new WTE plants built in the E.U., Japan, Singapore and elsewhere.

Since energy costs will continue to go up, the value of the energy captured from waste-to-energy facilities will continue to reduce the cost of these facilities relative to landfilling. Congress's recent inclusion of waste-to-energy in its extension of renewable energy production tax credits will increase this advantage.

While in the last decade the U.S. has been laggardly in this area as it has also been with regard to other environmental initiatives, other countries have moved decisively to develop new state-of-the-art capacity. For a review of recent global developments in waste-to-energy, which quantifies the amount of new capacity developed elsewhere in the world and provides an assessment of relative environmental impacts, see the article by Earth Engineering Center director Nickolas Themelis in the journal of the International Solid Wastes Association at ([www.columbia.edu/wtert](http://www.columbia.edu/wtert), Publications).

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<sup>ii</sup> I am indebted to Councilmember Michael McMahon for coining this phrase, which characterizes the effect of this measure more accurately than does the traditional label, "pay-as-you-throw."

<sup>iii</sup> There are means other than bags and tags that might be used in different parts of NYC, e.g., rigid containers of varying sizes. Hammer, Stephen and Benjamin Miller, "It's Your Garbage. Pay For It", *New York Times*, 7-24-03.

<sup>iv</sup> R. W. Beck, *Preliminary Waste Characterization Study*, Final Report, 9-2004, <http://home.nyc.gov/html/dos/pdf/pubnrpts/swmp-4oct/REPORT%20PDFS/2%20PWCS-FINAL-Report.pdf>

<sup>v</sup> Rail consultant Herbert Landow has proposed high-capacity freight ferries that would be capable of taking up to 125 railcars at one time, which would cost on the order of \$100 million. Such a ferry would be capable of handling all the city's waste with considerable capacity remaining for other freight purposes. (Personal communication from William Galligan, 1-31-05).

<sup>vi</sup> McMullen, Cheryl A., "Agency Runs Central Landfill, Heads State's Recycling Plan," *Waste News*, <http://www.wasteneews.com/mfocus/providence/providence6.html>; Benjamin Miller phone conversation with Claude Cote, senior policy advisor, Rhode Island Resource Recovery Corp, 1-8-02.

<sup>vii</sup> Landfill Directive, 1999.