DEVELOPING STATE RECYCLING RATES:
DON'T OVERLOOK THE INTRA-STATE ISSUES

(DRAFT 3)

John Stutz
Paul Ligon
Brian Zuckerman

Tellus Institute
11 Arlington Street
Boston, MA 02116-3411
617/266-5400

May 30, 1995
TABLE OF CONTENTS

Introduction............................................................................................................................................. 1
Inter-State Problems: North and South Dakota.................................................................................... 3
Intra-State Problems: New York State ................................................................................................. 4
Measurement Opportunities and Limits ............................................................................................. 6
Political Issues and Data Development .............................................................................................. 10
Conclusions and Recommendations .................................................................................................. 11
Notes and References.......................................................................................................................... 13
Introduction

Those in the solid waste management field are constantly receiving data on recycling rates. Indeed it sometimes seems as if such data is underfoot everywhere, like mushrooms after a summer rain. For example, the April 1995 issue of *Biocycle* contains Part I of *Biocycle*’s annual *State of Garbage in America* report. (Notes and references follow the text.) Among other things, this report provides recycling rates for all states. Additional data is provided by standard program type, distinguishing curbside and drop-off service as well as commingled and source-separated collection within curbside collection. Sources such as the *Biocycle* report are invaluable, helping planners and project developers get a feel for the solid waste management methods and results across the country. However, for those who look closely at the data, there is also a bit of discomfort. For example, the EPA, which in a recent study relied substantially on the *Biocycle* data, did not use the data directly. Rather, a number of adjustments were made. The point here is not that *Biocycle* is doing a bad job of reporting: it isn't. *Biocycle*’s *State of Garbage in America* simply reflects problems one encounters in any attempt to compile such a report. A recent survey of recycling at the city level released by the U.S. Conference of Mayors and the Municipal Waste Management Association apparently has much more severe problems. Nevertheless, data, such as that produced by *Biocycle*, makes one a bit leery of putting too much weight on recycling rates reported by states. Continuing with the "mushroom analogy" one has the sense that, while they look solid, recycling data are actually quite fragile, and that only very knowledgeable consumers can swallow them without the risk of very unpleasant results. The question is, can one do better? In particular can the EPA, in some form of partnership with the states, do better? Here "better" means roughly producing the general type and range of information contained in the *Biocycle* annual reports, in a self-consistent manner based on a reasonable set of hard data.

Why is it difficult to develop recycling data? What stands in the way of simply compiling state data in a relatively straightforward manner? Those who have discussed the compilation of state data, as well as those who have addressed the issue of computing recycling based in first principles turn quickly to questions of terminology, raising one form of what we will call the *Tower of Babel problem*. The problem, as it is usually presented, is that different parties define and develop data relevant to recycling quite differently. Thus apparently similar surrounding measures collected from a variety of sources will in fact mean quite different things. Viewed this way the problem is largely one of terminology.

It is tempting to think that difficulties associated with the development of recycling data are largely or entirely due to issues of terminology. If all the states would simply agree to use similar definitions and procedures, the problems would disappear. Further, it shouldn't require much additional work to settle on such a set of definitions and procedures. The NRC has long been at work on Measurement Standards and Reporting Guidelines. It produced useful detailed proposals over five years ago. We think this view is simply wrong. We agree that terminology is important but see it as far less tractable than the preceding comments might suggest. It isn't an accident that states have continued to use widely-divergent definitions and procedures in developing recycling data, long after
it should have been possible to develop a reasonable, uniform approach. To understand why such diversity persists, one needs to consider a number of factors, including the following:

- **Inertia.** Once a state has put in the effort required to set up a data collection system, its "investment" becomes a barrier to change.

- **Politics.** The analysis of recycling is often entwined with the need to meet, or at least appear to meet, state-mandated waste management goals.

It turns out that the second factor is the more complex of these two. We will discuss it later in this paper. First, however, we want to raise a more fundamental point which has often been overlooked. That is the existence of a Tower of Babel problem within states. Consideration of this form of the problem lends to a rather different set of concerns than the terminological issues which dominate the discussion of differences among the states.

There are two quite different Tower of Babel problems associated with the development of recycling data.

- **The inter-state problem--comparability of data--is due largely to differences in definitions and approaches among the states.**

- **The intra-state problem--validity of data--is due primarily to limitations in the range and consistency of the information on which the solid waste districts must rely in responding to state-level requests for recycling information.**

Inertia and politics affect both the inter- and intra-state problems, increasing the difficulty of dealing with each of them.

The first problem is much discussed in the literature. The second has received much less attention. However, both must be addressed if reasonable recycling data is to be produced. And, as we will explain, the responses required for the two problems are quite different because their causes are quite different. Broadly speaking, the first can be addressed by adopting a common framework for analysis and/or "rules for translation." The second requires the use of a standard model, or modeling framework, for solid waste generation, collection, transfer and use or disposal which allows the available information to be reasonably and consistently fitted together.

By focusing on the inter-state problem, we don't mean to suggest that Tellus is unique in recognizing that there are problems which affect the development of recycling data by an individual state. That is certainly not the case. Issues related to the development of recycling data within individual states have been discussed by the Northeast Recycling Council of the Council of State Governments (NERC). NERC's "Overview of State Programs" touches on many of the points we will
Our contribution is to highlight the fact that problems among and within states are quite different, and that the methods needed to address them are quite different.

The scope and goals of this paper are quite limited: we simply wish to raise and briefly discuss what we see as important issues. We certainly don't see this discussion as the "last word" on any of the issues raised. Indeed we will be quite satisfied if our paper provides a sufficiently cogent and insightful first word to provoke additional discussion.

**Inter-State Problems: North and South Dakota**

It is often difficult to reconcile the recycling data one receives from states. Consider, for example, the data for two states--North and South Dakota--shown in Table 1 below. These states are similar in population and location. However, based on the data in Table 1, they are far from uniform in matters related to solid waste.

<table>
<thead>
<tr>
<th>State</th>
<th>Population (tons/year)</th>
<th>Solid Waste (%)</th>
<th>Recycled Population Served By Curbside Recycling</th>
<th>Drop-off (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Dakota</td>
<td>635,000</td>
<td>18</td>
<td>100,000</td>
<td>Y</td>
</tr>
<tr>
<td>S. Dakota</td>
<td>709,000</td>
<td>20</td>
<td>7,000</td>
<td>Y</td>
</tr>
</tbody>
</table>

There are two disparities which "jump out" from Table 1. The first concerns solid waste generation. According to the data in Table 1, per-capita generation of solid waste is about 50 percent higher in South Dakota than in North Dakota. This suggests rather strongly that the two states are not using the same definition of solid waste. The data from North Dakota shows waste per person per day at a bit over 4 lbs. This is consistent with the national data developed for the EPA. For South Dakota the figure is much higher. In its review of *Biocycle's* state recycling data the EPA pointed out that South Dakota includes substantial industrial waste in its reported solid waste. In 1991 industrial waste accounted for 303,000 out of 842,000 tons. Without the industrial waste, the discrepancy in waste per capita disappears.

The second disparity concerns the recycling rates. Given the disparity in curbside collection, it is quite surprising that South Dakota has the slightly higher recycling rate. *Biocycle* does address this issue, pointing out that a 1995 yard waste ban increased recycling in South Dakota dramatically.
Indeed, based on EPA data, South Dakota would have to have started composting about two-thirds of all yard waste in the state to account for the change in recycling rates between the current 20 percent recycling rate and the 10 percent figure shown in Biocycle's 1994 survey. Removing composting, as the EPA did in its analysis, will really help here.

Our problems in reconciling the Biocycle data for North and South Dakota are typical of the general problems one faces in reconciling recycling data among states. However, we want to direct the reader's attention away from these problems. It's not that they aren't difficult or important: they are. Rather, it's that they miss a key point. Our entire preceding analysis accepted state data, whether from Biocycle or the states themselves, as a starting point. Nowhere did we consider the source of this state data or its quality. Looking within a single state reveals that there are also areas for concern.

**Intra-State Problems: New York State**

Our aim in this section is to explore in a bit of detail the state data which efforts to provide nationwide information in a uniform manner would take as their "point of departure." To provide a focus for our discussion we will consider the situation in New York State (NYS). The choice of NYS is to some extent a matter of convenience: there is a good deal in the literature about NYS and, in addition, Tellus has extensive first-hand experience working there at the state, regional and local level. We would also note that NYS was one of the first states to establish goals and to implement a reporting requirement. Thus, for NYS, we have a substantial historical record and detailed current data, both of which we will discuss a bit critically. However, our comments about NYS should not be taken as a suggestion that problems are greater there than in other states. In fact the situation in NYS is probably better than average among the states.

NYS has a large and extensive state-level bureaucracy which collect analyses and publishes data on the state's solid waste management system. In NYS the Department of Environmental Conservation (NYS DEC) collects data on recycling in a uniform and thorough manner. This data is published by the Division of Solid Waste of the NYS DEC in The Recycling Bulletin. Appendix A of this report provides a representative sample of the directions, data form and summary data from the 1993 Bulletin. The Bulletin provides all of the data discussed in Table 2 of this report, as well as an indication of the methods to be used for the production of the data.

One might expect that the NYS efforts related to the development of recycling data would be regarded as a model of success. However, that has not been the case. Early efforts by the state were subject to substantial criticism. Recent developments are even more troubling. One of the professional associations in NYS is the New York State Association for Reduction, Reuse and Recycling (NYSAR). As its name suggests, this group has a strong interest in recycling in the state. The Winter newsletter of the association contained an item on uniform reporting which is reproduced in its entirety as Appendix B. The item discusses a revised reporting form. We would direct attention to the last paragraph:
Uniform reporting will benefit both NYS municipalities and the DEC by allowing valid comparisons between reporting entities and setting meaningful standards and goals for recycling performance.

The implication here is quite clear: the existing NYS procedures don't allow valid comparisons between reporting entities. Coming from the NYSAR this statement has to be taken very seriously. Many of the members of this association are the local officials who fill out the state's current forms or at least work very closely with those who do the reporting.

Before going further it is important to note that problems such as those discussed in the preceding paragraph are not unique to NYS. In fact, local solid waste officials often have substantial reservations about the "data" they provide in response to state-level reporting requirements. Perhaps the most dramatic example of this type of account is a recent Tellus project outside NYS. Tellus was providing assistance to local solid waste planners using our planning software, WastePlan. To develop some of the inputs to WastePlan we relied on reports the locality had made to the state. During a teleconference reviewing the WastePlan analysis we were told by the locality not to rely on this data. While the local officiates didn't simply come out and say it, their message was clear: while we developed this data and reported it to the state, we aren't really comfortable relying on it ourselves.

What we are discussing here affects the entire foundation on which any attempt to develop state recycling data by adjusting or reconciling state data will rest. States do not have direct access to the data required to develop estimates of recycling tonnage or rates. Instead, the states compile data provided by local solid waste authorities. There is no issue of terminology or procedures here, or at least there needn't be: the state can specify what it wants in some detail. As the data in Appendix A shows, NYS does exactly that. The problem is that, while the local authorities often lack the data and resources to comply fully, they often have no option but to do so. The local authorities do the best they can to "develop" data, and the states treat these responses as statements of fact, rather than looking to see how such data have actually have been created. The result is that states compile data of such varying quality that a new, largely hidden Tower of Babel problem emerges. Political requirements such as the fact that, in some cases, data reports double as "report cards" on local progress toward state- mandated goals, only make the need to comply greater and the potential cost of flagging problems higher. The net result is that data quality declines still further.
**Measurement Opportunities and Limits**

There are two factors which provide the context for a realistic discussion of recycling data development by solid waste districts within a state:

- Recycling data reflects a great deal of information about the waste stream. Thus, to develop it, a great deal of information is in fact required.

- Solid waste district officials don't generally have the information required, nor do they have the means or resources to develop it.

In order to grasp these points fully, it is useful to look first at the type of data being requested and then at the situation of the district officials asked to supply it. To begin, it is useful to step back and consider for a moment what we have in mind when we say "recycling data." To provide a focus for this discussion we have prepared a simple table.

**TABLE 2**

Types of Recycling Data

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Material Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Amount</strong></td>
<td>Tonnage of waste recycled</td>
<td>Tonnage of clear glass recycled</td>
</tr>
<tr>
<td><strong>Rate</strong></td>
<td>Percent of waste recycled</td>
<td>Clear glass recycled as a percent of all clear glass</td>
</tr>
</tbody>
</table>

Table 2 shows four types of recycling data. "Clear glass" is used simply to illustrate the material specific option. The question is, which of these should an effort to produce "better" recycling data address? Our recommended response is "all of them." Each of the items illustrated in Table 2 provides a separate, extremely important piece of information for both solid waste planners and those interested in the use of recycled materials as an input to manufacturing.

From Table 2 it is clear that a reasonably complete set of recycling data contains a great deal of information, about the **materials recycled** and about the **reference waste stream**. We need to know a great deal about the waste stream to produce the recycling data. For example, if the reference waste stream for Table 2 were municipal solid waste (MSW), then developing the data shown in the table for clear glass requires knowing how much of the MSW is clear glass, and how much of that
clear glass is recycled. In fact, it is very difficult to obtain hard data of this sort, particularly at the solid waste district level where the data is actually collected or developed.

Let us assume for a moment that Table 2 illustrates a minimum level of scope and detail for state-level recycling data. Where will that data come from? In general, state officials don't have direct access to such data. If they want it, they need to get it from local officials. Having said this, the obvious question is "How do the local officials develop the type of data shown in Table 2?" The answer is "with great difficulty."

Local solid waste planning officials have difficulty supplying complete information on recycling rates and amounts occurring in their area. Our discussion of the situation in NYS and elsewhere makes that quite clear. What explains this difficulty? In our view the explanation lies in the fragmented nature of the ownership and/or control of the solid waste management system. To explain this, let us recall briefly how a local solid waste system might be configured. The following is not the only possibility, but it is typical of what one might encounter at the local level. To keep things relatively simple, we consider a local solid waste district which consists of one town and a rural, unincorporated area. The solid waste management system looks as follows:

- In the urban portion of the district, residential waste and recyclables are collected at the curb by trucks owned by the town. Waste is delivered to a landfill owned by the district. Recyclables are collected with only limited separation and are tipped at a materials recovery facility (MRF) which is privately owned and serves a region larger than the district.

- About 30 percent of the district is rural. It does not receive curbside collection service from the town. While curbside service can be purchased from private carters, most residents drop off their waste at the landfill, or simply burn it. Their recyclables are accepted at a drop-off center run by the town, which transfers them to the MRF.

- Most, but not all, non-residential waste is collected by private carters who may or may not use the district landfill. Here "non-residential" includes a substantial number of garden apartment complexes served with dumpsters. Recycling is not required in the non-residential sector, though a good deal takes place. The private carters provide some recycling services, sending some but not all of the materials collected to the MRF. Specific materials, such as cardboard from transportation packaging, are source separated and sold by the generators to brokers who are not in the district.

- Non-residential waste collected by the town is treated in the same way as residential waste; it goes to the landfill and the MRF.

- Collection and disposal of Industrial, and Construct and Demolition waste is handled privately by special haulers who take it to facilities outside the district.
With all of this in mind, imagine that the mail arrives for the day at the office of the local solid waste district. The director--one of only two non-operations staff, excluding part-time office help and an intern from the local college--opens it and finds a NYS-style form for reporting recycling in the local district. The state "requests" that the form be completed fully and returned within the next three weeks. Ask yourself, where is the required information going to come from?

Typically, at least in the experience of Tellus staff who work directly with such local district staff, the director can call the town and get a good idea of the tonnage of waste and recyclables hauled by the town's trucks. Even without formal composition studies, the town staff will often have a relatively clear idea of urban residential waste composition. Town or district officials may know that the large supermarket source separates cardboard and sells it to their carter. However, they won't have data on these sales. The private carters of course know what they recycle. However, they quite rightly consider this and much other information about the non-residential waste "proprietary." With a few calls to the MRF and the landfill, as well as some limited cooperation from those private haulers who the director knows personally, a rough form of the information required can and will be developed. Local authorities do not ignore "requests" from the state which responds to their permit applications, grant proposals, etc.

Looking at the scenario we have just sketched, there are number of points worth noting about the process of "filling in the form:"

- There is no completely satisfactory way to develop the required data. The best information will be incomplete and overlapping. In many cases the best effort will involve "educated guesses" which in all likelihood will be made differently by a state's various districts.

- The quality of the data produced will depend directly on the extent to which the town provides solid waste services. Consider, for example, how our scenario would change if there were not rural area and the town collected all waste, or if all collection was provided by private haulers contracted individually by both residential and non-residential generators.)

- The effort put into developing the data will depend upon the available resources, such as "free time" provided by the intern in our example, and on the vigor with which the director pursues the task.

- None of the effects just mentioned will be visible when the state receives the completed form. Without some systematic cross-checking, control total analysis and other error-trapping effort at the state level, all forms will appear to provide "hard data."
Forms, such as those used by NYS for example, suggest that there is some set of detailed, local data that those filling in the form could utilize. In fact, as our scenario shows, the actual situation is quite different. What actually exists is a hodge-podge of incomplete, inconveniently aggregated data, some public and some not, from which those trying to complete the forms have to extract their best estimates of the required information.

To hammer home our point, consider the difficulty which our district director might have in estimating the tonnage of clear glass recycled. The only entity in our scenario which has actual data on clear glass tonnage is the MRF. That data is regional, not specific to the district. Further, it will not include any clear glass which is sold through brokers. In our scenario no one has data on clear glass generation. If one wanted to develop this data there would have to be waste composition studies. To provide reasonably complete information, these studies would need to cover the town and the private haulers. Some composition data may, of course, exist, but it is unlikely to be entirely local, complete or fully up-to-date. The bottom line is that there is no direct local information on either the amount of clear glass on the MSW generated in the district, or on the amount recycled. Nevertheless, if a NyS-style form is to be completed, an estimate of the tonnage of glass is needed. In most cases it will be "developed" and forwarded to the state as part of the completed form. Multiply this discussion by 10 or 20 to cover all the items of data that state forms required solid waste district staff to develop, and the situation in NYS, as well as the commented of the Tellus client cited earlier, becomes quite understandable.

One must be careful not to draw the wrong conclusions from the preceding discussion. The development of comprehensive, detailed recycling data at the local level is important for those who want the specific data being developed, not necessarily for the local planners. Of course, we would all like better data if it were available. Local solid waste planners would be very interested in the type of data the states provide if they could really develop it. However, for their purposes, the type of data they are able to develop is sufficient. In our scenario, for example, all the town really needs to know is the commingled tonnage it tips at the MRF. If it really wants to know more, it can perform composition studies, but only for the material hauled by the town. The town only needs data on the private haulers to meet the state requirements, not its own. We would also point out that the fact that local "estimates" may not be consistent across the state is not a problem for the individual local planners. After all, they do act locally.

To sum up, what we have referred to as a Tower of Babel problem arises within a state when the state compiles the data provided by the localities. The localities have developed and submitted data based on a variety of assumptions, approximations and "educated guesses." There is no reason to assume that the local methods for developing relatively uniform-appearing data were themselves at all uniform. The state deals with the data, not the methods used to develop it. As part of the compilation process it will fit the local data provided into standard categories. The result is that, when we look at a single state as opposed to a multi-state situation, the compiled data looks uniform. However, this doesn't mean that inconsistent items of data have not been combined. It simply means that the process has been managed so that, by the time the state releases the data, this inconsistency is largely hidden.
from view. However, if state data is exposed to scrutiny, such as that which we focused in the *Biocycle* data, similar issues will arise.

**Political Issues and Data Development**

In the preceding section we treated the problem of developing the recycling data requested by a state as a technical problem. Certainly the technical issues—obtaining complete and consistent information in the form requested—provide formidable obstacles. However, these are not the only obstacles. The relationship between district solid waste managers and the state bureaucracy is in large part political. This can influence the process of developing and submitting recycling data. There are two important ways in which this occurs:

- Recycling data is linked to state goals. The need to at least appear to be meeting these goals may influence district reporting.

- Recent decisions on flow control (Carbone and others), as well as a growing local resistance to "unfunded mandates," has caused local solid waste managers to resist reporting requirements.

Both of these points need to be taken into account in any realistic consideration of recycling data collection.

Connections between state goals and reported recycling are complex and often difficult to see. The need to at least appear to meet goals can create distortion, even when data reporting and development are not obviously affected. As an example, consider the impact of a state-imposed ban on yard waste disposal. It has been our experience that, with such a ban, the assumption is made that all or most yard waste is diverted, largely by home composting. If, as in NYS, the recycling rate is defined as the amount recycled divided by the amount recycled or disposed, then, by lowering disposal through the assumption of success in a yard waste ban, the recycling rate can be inflated. In addition, in some cases composting is counted as recycling. Such an arrangement was just approved in California for grass used as landfill cover.

Of course, it is possible to examine the data reported and make adjustments for some things. For example, if one wanted a "recycling rate" which did not count composting, one could simply adjust the computations to shift the backyard (and other) composting out of the calculations. This is what the EPA did in its recent analysis of state recycling rates. However, even with data as detailed as that provided in NYS, it would be hard to develop data which reflects only MSW. Clearly, the NYS data recycling includes industrial waste, but it is not broken out by waste stream component. At best one could adjust for certain obviously industrial components. Further, there are some "political effects" which simply defy adjustment. For example, some states, such as Wisconsin, have banned all
recyclable material from their landfills. The effects of such political decision on recycling data are likely to be quite pervasive.

Political issues extend beyond the need to meet state goals. For example, political issues will likely affect the level of effort districts put into state-mandated reporting. For example, recent developments in NYS show that the fight against all unfunded mandates, particularly those that involve planning and reporting, is in full swing. At a recent NYS Summit on Solid Waste opposition of this sort was clearly and strongly voiced. One has to assume that, at least in some cases, this will have an effect on reporting. When available data is incomplete or vague, districts may not make the extra effort required to do the best job possible. Instead, they are likely to lean toward conclusions which simply show that state goals are being met. This will get the state "out of our hair."

Local reactions to unfunded mandates need to be carefully considered when framing any new approach to the development of state-level recycling data. In particular, now is not the time to think about imposing new reporting requirements of any sort. Indeed, the tide is running in the opposite direction. Put this together with another political development--massive cuts in the NYC DEC budget, some of which will likely affect the Division of Solid Waste which develops the Bulletin—and one can imagine a situation in which worse, not better, data is being developed by NYS. Nor is New York unique in this regard. Across the nation resources at the state and district level are simply not available to provide better data.

Conclusions and Recommendations

There are two rather different approaches that the EPA could take to the development of consistent state-level recycling rates and amounts of the type illustrated in Table 2. The first might be called the survey (or "improved Biocycle") approach. Using this approach the EPA would treat state-level data as a starting point. While the EPA may work with state officials, assisting them in developing reasonable uniform reporting procedures, the development and production of state-level data remains essentially a state function. The EPA would restrict its data development efforts to compiling state-level data, and possibly investigating a few obvious problems.

The strength of this approach is clear. It is a simple, finite and do-able task. Doing it well would definitely help reduce what we have called the inter-state Tower of Babel problem. However, as our discussion of the situation in NYS should have made clear, this approach will not deal with the many data development problems which exist within states. To deal with those requires a rather different approach.

The alternative approach is what we have called the standard model approach. In this approach the EPA would lend a hand with the task of organizing the data required to develop estimates of recycling rates by state. The objective here would be to develop a standard materials flow model for each state, and then link these models to ensure coherence. One approach would be for the
EPA to work with the states, assisting them in developing the state models, thus ensuring that the results can be linked to provide a coherent national picture.

It is difficult as part of this paper, to provide much detail on the standard modeling approach. The point we would stress is that, using such a modeling approach, the EPA would be able to account for the actual material flows through the solid waste system, just as those flows were described in the section of this paper dealing with local solid waste management. The analysis would be developed so that, based on the flows as modeled, an internally self-consistent set of estimates of recycling tonnage and rates would be generated. These results would include the data described in Table 2 at a minimum.

We do not see the two approaches described above as being in competition. In our view the approaches are both important and to some extent complementary. Both should be pursued.
Notes and References


ii. EPA, *Report to Congress on Flow Control and Municipal Solid Waste*, March 1995. See in particular Appendix III-C.


vi. Weston, "What Do Those Recycling Numbers Mean?" (Undated)

vii. By the end of 1989 the NRC had circulated a relatively complete draft of *The National Recycling Coalition Measurement Standards and Guidelines*.


x. See Exhibit III-A.2 in the reported cited in 2. above.


xiii. Maarten de Kadt, "Evaluating Recycling Programs: Do You Have the Data?", *Resource Recycling*, June 1992. This article, while a bit dated, does provide a very clear, complete example of the way in which different data processing methods used in New Jersey and New York create problems for those who want to compare results from these neighboring states.

12. The NYSAR³ Network, Winter 1995. At the NYS Summit NYSAR³, members and other NYS district and local solid waste management officials made it quite clear that they didn't trust certain of the data published in the *NYS Bulletin*. However, all such discussion was "off the record."
