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PUBLIC HEARING

before

ASSEMBLY WASTE MANAGEMENT, PLANNING AND RECYCLING COMMITTEE

"Recycling in New Jersey:
Progress Report on the Recycling of Aluminum,
Glass, Plastics and Newspapers"

May 10, 1990
State House Annex
Room 403
Trenton, New Jersey

MEMBERS OF COMMITTEE PRESENT:

Assemblyman Harry A. McEnroe, Chairman
Assemblyman Daniel P. Jacobson, Vice Chairman
Assemblyman Thomas J. Duch
Assemblyman Robert C. Shinn, Jr.

ALSO PRESENT:

Algis P. Matioska
Leonard J. Colner
Office of Legislative Services
Aides, Assembly Waste Management, Planning
and Recycling Committee

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Hearing Recorded and Transcribed by
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New Jersey State Legislature
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PLANNING AND RECYCLING COMMITTEE
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NOTICE OF A PUBLIC HEARING

The Assembly Waste Management, Planning and Recycling Committee will hold a public hearing on:

*Recycling in New Jersey: Progress Report
on the Recycling of Aluminium, Glass, Plastics and Newspapers*

The hearing will be held on *Thursday, May 10, 1990 at 10:00 a.m. in Room 403 State House Annex, Trenton, New Jersey.*

The public may address comments and questions to Algis P. Matioska or Leonard J. Colner, Committee Aides, and persons wishing to testify should contact Elva Thomas, secretary at (609) 292-7676.

Issued: 4/12/90

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ASSEMBLYMAN HARRY A. McENROE (Chairman): Good morning. I would like to welcome everyone here this morning. This is a regularly scheduled hearing before the Assembly Waste Management, Planning and Recycling Committee on Recycling in New Jersey: Progress Report. We expect the other members of the Committee to arrive shortly. I am the Chairman, Harry McEnroe, and I would like to introduce the people who are here on the panel. On my left is Algis Matioska, Aide to the Committee, and on his left is Leonard Colner, an additional Aide to the Committee. We also have Kevil Duhon of our staff joining us, and Glen Beebe from the Minority Staff, who has been with us for a long period of time.

The hearing today is being held as a part of our overall review of the State's solid waste management policies, statutes, and programs. The first of these hearings was held a few weeks ago on issues related to the disposal of residual ash. We will hold other hearings in the weeks ahead, including a hearing on the recycling and handling of special wastes such as tires, white goods, and other circumstances of waste, disposable diapers included. That meeting is presently scheduled for May 23.

As you know, a review of the State's waste policies is being undertaken also in the executive branch. The hearings held by this Committee are intended to parallel that review along a somewhat different and, of course, independent path. We will be sharing the transcript of today's hearing with the Department of Public Planning in the Governor's Office, and will be calling upon DEP and other executive agencies for input as we try to get through some of the tough issues facing us in this area.

Before turning to members for other Committee comments or public comment on this portion of the hearing, I just want to frame some of the brief thoughts I have on behalf of the Committee that we think are important to the overall assessment

of recycling in New Jersey. There are several unavoidable facts in New Jersey that must be addressed, and we are speaking about any solid waste management proposals.

The first is that we generate a tremendous amount of waste in this State. We have to plan for it in dealing with collecting, hauling, and managing 11 million tons of municipal industrial waste each year.

Second, our State is highly, if not excessively dependent on out-of-state disposal, since we are not able to dispose of the solid waste we generate within our own borders. Presently we rely on out-of-state disposal for more than 50% of our solid waste disposal needs. During the recent past, the long-term availability of these facilities has been called into question, as these states have taken steps to curb interstate waste flow into their own disposal facilities. To deal with these disposal problems, our State's solid waste programs have been driven by a goal of achieving waste management self-sufficiency by the end of 1992.

Third, solid waste management has become an economic, as well as an environmental issue. Tipping fees in the summer of 1989 were above \$100 per ton at major transfer stations in Union, Hunterdon, Somerset, Morris, Sussex, Bergen, and Essex Counties. Increasing costs for solid waste disposal are putting heavy financial burdens on all of our taxpayers, especially on senior citizens on fixed incomes, people with young families, and, of course, the working poor.

Finally, the citizens of our State are demanding an environmentally responsible solution to our solid waste problems. It is clear that New Jersey will not build 20 or 21 mass burn facilities in various parts of the State. Certainly that being the case, we will have to devote additional energies to other aspects of the State's solid waste strategy, including improvements in recycling programs. This, of course, is a dramatization, if you will, of that obligation, a renewed

statewide and regionwide commitment to source reduction and further development of the source separation of waste treatment components of our solid waste collection disposal systems.

As this meeting begins, there is much to be hopeful about in the future of recycling. All but one of our counties has implemented a mandatory recycling program, and that county should be on-line in a few short months. From 1986 to 1988, we increased our level of newspaper recycling in the State by 61%. We increased the recycling of glass by 135%. We increased the recycling of aluminum by 96%; cans and mixed metals by 236%; plastic, although not the enormous percentage that we might hope for, has still increased by 1000%, insofar as recycling during the past three years. The recycling of leaves and composting has increased by 55%, and the statewide goal of 25% is, indeed, an overall reality that we are reaching.

These advances should strengthen our hope that more can be done. Each additional ton of waste recycled means that fewer dollars will have to be devoted to landfill disposal costs, resource recovery facility construction, and energy use for converting raw virgin materials into consumable goods. Our hopes for recycling, however, must be tempered by the constraints we have encountered during the implementation of the Mandatory Source Separation and Recycling Act. During the past two years, we have found that the markets for certain recyclable materials are extremely volatile and, in some cases, inadequately developed.

Public awareness of the need for recycling is much too low, and the public is not always prepared to accept recycling centers close to their backyards. We know very well about the difficulty of siting any kind of facility in this area.

The equipment needed to handle mountains of material is not always in ready supply. Government at all levels appears to be ill-equipped to handle the wide range of

enforcement and compliance issues that arise when the costs of handling, treating, and disposing of waste go up.

My hope, as Chairman of this Committee, is that today's hearing will give our members an accurate picture of where New Jersey stands on recycling and where we can realistically expect to go both in an overall sense and with respect to our primary recyclables -- glass, newspapers, aluminum, and plastics.

I would urge the witnesses appearing before us today to teach us about the problems and prospects of recycling in their particular areas. Tell us what is going on in your particular markets, and tell us what you can't do because the technology or capital isn't available. Also, tell us about the things that we can do as the Legislature and as a State government committed to solving this great problem facing the most densely populated state in the nation. If there is a difficulty with recycling and it must be solved anywhere, it must begin today.

So, I have a long list of people who wish to comment. The intent of our hearing, again, is to review the progress, or the lack of same, and the support that is needed legislatively in the area of recycling of aluminum, glass, plastics, and newspapers.

We have a long list of 22 people who have advised us that they would like to comment. We will begin with the Director of the Division of Solid Waste Management from the Department of Environmental Protection, John Czapor. John, would you join us at the table, please?

J O H N V. C Z A P O R: Thank you, Mr. Chairman. I am John Czapor. I am Director of the Division of Solid Waste at NJDEP. With me is Mary Sheil, who also I am sure you know very well. Mary is Deputy Director of the Division. Thank you very much for the opportunity to brief the Committee on New Jersey's progress in achieving recycling goals.

In preparing our presentation today, we were aware of the large number of people from various organizations very much involved in recycling who will be following us. Our purpose today is to provide information to serve as a basis for additional discussion today and future discussion; to give you a snapshot and a brief overview of the recycling program in New Jersey to date; and to sort of focus specifically on various parts of the waste stream and give you specific data that hopefully you can use in addressing various components of the waste stream in discussion yet to come today and at future meetings.

I will give a brief overview of sort of waste material in New Jersey, waste generation rates, and will then turn it over to Mary, to discuss in greater detail the recycling program in New Jersey.

It is certainly appropriate to say that since 1987, recycling has become a way of life for New Jersey residents. In 1988, almost 2,800,000 tons of material were recycled in New Jersey. This is up from 1,800,000 tons recycled in 1987. I would note that 1989 was the year when many of our recycling programs really came up to full speed. That information and that 1989 data is statutorily required to be reported to us by July 1, so we will be very eagerly looking at the data that we anticipate getting this summer in terms of how we are achieving our mandated goal of 25%.

ASSEMBLYMAN McENROE: Excuse me, Mr. Czapor. I just want to acknowledge Assemblyman Tom Duch, who is part of our Committee and has just arrived. I'm sure you know the Assemblyman. Please continue.

MR. CZAPOR: Thank you. We have provided the Committee with a package, and we will give an abbreviated version of that package in our presentation. I call your attention to it. There will be copies of the overheads -- which I will go through in a minute -- that will discuss

recycling by waste category. There is also hard data on county-by-county waste generation rates and recycling numbers through 1988, and there is also a county-by-county review on the status of the county-by-county solid waste programs, which includes at least some brief information on county recycling programs. I hope that will be of assistance to the Committee as they proceed further with this analysis.

With that I would like to just do a brief five-minute presentation on some of the waste composition questions that I think are most pertinent when discussing existing recycling programs and additional recycling programs.

I think your comments, Mr. Chairman, were very appropriate. (Mr. Czapor moves away from recording microphone to overhead projector; sections of his comments were indiscernible to transcriber) You will note that in the package we have included numerically, in tabular form, information on recycling rates by various materials -- paper, glass, plastics, metals. What we tried to do for the purposes of today, was sort of synthesize that in graphical form so it would be a little bit easier to discuss. But the hard numbers are available, as is the backup.

I think it is important to realize that recycling traditionally has focused on the municipal solid waste stream, and what individual citizens and communities can do to reduce the amount of waste they generate. That is in general about 60% of the total waste generated in New Jersey -- the total of 11 million tons of waste we generate a year.

It is appropriate, I think, as we move forward from where we are now into increasing recycling, to change our focus and our philosophy a little bit from recycling as a means of conserving resources and environmentally sound policy, to recycling as a solid waste technique that reduces our dependency on disposal facilities, which will result in fewer and smaller facilities. In other words, dealing with the whole

waste stream, regardless of whether it is municipal, commercial, or industrial; regardless of whether it is yard waste or construction and demolition debris. All of these take up landfill space if not reused, recycled, or reduced, all of which would use up our precious land resources.

We have provided the Committee with two general numbers which we think are roughly good numbers to work with in a general discussion. They indicate the type of waste in the waste stream by component, paper being approximately 27%; plastics being approximately 9%; metal, again approximately 9%; yard waste, a very big factor, 16.3%; construction and demolition debris, 24%. In designing any recycling program, we should look -- and in your future sessions I believe you will look -- at what can be done with those individual facets, those individual pieces of the pie, to reduce the need for disposable facilities.

To give you some idea of a snapshot of where we are, we have taken the liberty of taking each one of those pieces of the pie and sort of focusing on them in greater detail. Hopefully this will be helpful in the discussions to come later today. For example, paper. Paper is approximately 27% by weight. There is an issue there of weight versus volume, but by weight 27% of the waste stream is paper. Newsprint is approximately 16% of that 27%; corrugated approximately 30% to 32% of that 27%. We have done this for every part of that waste wheel, or that pie, and we think it is a very helpful tool in looking at where recycling programs will be most helpful, most effective, and give you the best bang for your buck. In other words, look at what we are likely to get out of the waste stream in terms of weight or volume, as we move through with your legislative initiatives.

We have taken the 1988 numbers -- and again, these are in the packages we provided to the Committee and Committee staff -- and tried to overlay the current recycling rates --

currently in, again, 1988 -- in each one of the sub-categories of paper. So, rather than give you a number for paper, that is the total recycling rate for paper, which isn't particularly helpful in discussing with the industry and with the private sector and the public sector how we might increase paper recycling, we add some focus by saying, "Where do we recycle what piece of the pie?" So, for instance, in this example, corrugated, which makes up 32% of the total amount of paper in the waste stream-- We have a current recycling rate of 27.6% for corrugated. So, we are recycling 27.6% corrugated; corrugated, in turn, being 31.8% of all the paper, and paper being 27% of the total waste stream.

What that does is allow you to find out in the aggregate what the total recycling rates are currently in the State of New Jersey. Hopefully, that will give you a tool to say, "Where can we improve?" Instead of just asking the question, "Can we recycle more paper and what will it take to do that?" the question becomes, "Can we do better in corrugated? Can we do better in newsprint? Can we do better in high-grade office? And, what can we do about recycling in the other category, or is that category a category that remains to be handled in another way, other than recycling?" Again, we have provided this for the Committee.

Similarly, we have done the same for glass. Glass is approximately 3.5% of the total waste stream, containers being approximately 77% of that 3.5%. Our current recycling rate is approximately 33.5% of all glass containers currently being recycled, given 1988 data. On this one, the computer didn't quite draw the 33% the way it should have, but the numbers are there.

Again, metals as a forum for discussion-- Metals breaking down into a number of categories -- aluminum -- aluminum containers specifically -- other aluminum, white goods and other ferrous materials, appliances and, once again, not to

belabor the point, but I would like to work with these carefully, to get an estimate of what we are doing statewide in terms of all these categories. You can see that the 1988 recycling rate for aluminum containers was about 40%, a very big component being white goods and other ferrous materials almost 50%. That includes the scrap metal; that includes white goods, again, not necessarily envisioned by mandatory recycling; not necessarily envisioned as part of the municipal solid waste stream, but something that is in the disposal -- that is required to be disposed of, and would take our precious landfill capacity if not handled appropriately.

Plastics: 1988 was clearly an early year for plastics. The chart doesn't change, so I won't even bother to put up the overhead. We basically show very little, essentially no recycling of plastics in 1988. That situation changed as we moved into 1989, and Mary will have some discussion of that.

A very big component of the waste stream, and the last one that I will really focus on is yard waste. Again, when the recycling program was envisioned, we dealt with paper primarily, aluminum, and glass; and we focused, to some extent, on plastics. But yard waste represents 16%, approximately, by weight, of the material disposed of. Again, with the action we took about a year-and-a-half ago, which essentially banned the disposal of weeds in disposal facilities in landfills, and required composting-- We took 76% of the weeds out of the solid waste stream; 76% out of the 28% that leaves represent of total yard waste.

Our purpose in presenting this as a brief overview is that hopefully it is an approach that the Committee can use today and in future discussions to sort of guide it in terms of looking at where increased recycling will get the greatest benefits.

I think, in conclusion, from my perspective, there are two aspects to recycling that need to be focused on: One is basically where it is just sound environmental policy to recycle from the perspective of conservation of resources and just good environmental ethic, and where we start to incur costs -- costs to the individual, costs to the municipalities, costs to the counties, where recycling is being done as a solid waste management technique. And there, these types of pie charts, whether they are run by weight or by volume, I think become very helpful, because the balance will be given a particular legislative or regulatory staff to reduce material in the waste stream: What do we achieve in terms of reduction of the material that needs to be handled?

I think we can take each issue, each component of the waste stream, and really put it to the acid test of how much it will buy you in terms of targeting increased recycling.

With that, I would like Mary to run through some of the specifics of the recycling program.

ASSEMBLYMAN McENROE: Thank you. Before we do that, I would like to acknowledge our Vice Chairman, Daniel Jacobson of Monmouth County, who has arrived to join us on the panel. He is a member of this Committee. Also, Bob Shinn, of Burlington County, an Assembly member for the past eight years, and an advocate of stronger recycling also.

We appreciate your being here, Mary. Thank you.

M A R Y T. S H E I L: (speaking off mike at projector) Thank you. The final goal, as set in the Mandatory Recycling Act, was 25% by approximately December of 1990, depending on the various counties'-- (sentences impossible to transcribe at this point, since Ms. Sheil is not using microphone)

There was an interim goal of reaching 15% of the municipal waste stream by 1989, and that stream was about 60% of the 11 million tons we generate in this State.

In 1988, which as John pointed out were the last numbers we documented, we did a 15% municipal waste stream rate, so you can see we hit our 15% interim goal a year ahead of time. If you base it on the total waste stream and the total recycling, which would include bulky scrap, automobiles, C&D waste, and yard waste, in 1988, based on the total waste stream, we were at a 24% recycling rate in New Jersey.

All of our municipalities have designated, and I think the counties have designated, at least three materials, plus leaves, which were specifically mandated in the law be kept out of the landfills as materials to be recycled. Approximately, as of today, 530 municipalities out of the 567, leaving 37 -- and some of them may be on-line, and we just don't have the data yet -- have passed their ordinances to designate paper, glass, and aluminum. Two-hundred-and-seven have included plastics; 190 have included tin by metal cans, with more coming on-line this year in that area; and they have also included, for the commercial sector, corrugated and office paper.

Now, some of the market development activities, as mandated by law, were the Business Loan Program and the Market Development Program. In the Business Loan Program-- Since 1985, when we gave out the first loan, we have given out \$4.5 million. Those loans range from \$50,000 up to \$500,000, and anyone can apply for them. For certain priority projects, that is, manufacturing recycling projects, such as a paper mill, you can get up to \$3 million in a low interest loan. In the Tax Credit Program, we had 253 applicants that had been approved. They came in with a total cost of \$13.6 million, and they did a 50% credit on that, or we had \$6.3 million in tax credits applied against recycling businesses in New Jersey.

The law also mandated that we have a State Procurement Program for paper, and that 45% of all the dollars by 1989 that we spend for buying paper in New Jersey must be spent on recycled paper. We actually exceeded that rate in 1988. I'm

sorry, that is the 1989 rate. Fifty-nine percent of all the paper that our Division of Purchase and Property buys is recycled paper.

In addition, we have a number of recycling centers that have been approved for tires and construction and demo waste. These are reviewed and approved by our Department. We have set guidelines and have drafted regulations that we are prepared to implement shortly for the siting of those facilities. Six approved are 2500 tons a day capacity, and there are 34 under review for those types of materials. That would be 18,000 tons per day capacity.

To give you an idea of what some of the counties are doing -- and this is the total recycling rate which would include not just the designated material, but also the bulky materials such as appliances-- It also includes C&D waste recycling, and it also includes yard waste recycling. So this is what each county has done as of 1988. You can see the rate of recycling -- the total recycling rate for those counties ranges from a low of 4.5% up to a high of 38%. In a county that is low like Warren-- That was before they brought their resource recovery facility on-line. They then began to concentrate on recycling, and they have added several materials to their program. They are actually shooting for a 40% recycling rate, because they are looking at a regional program with Somerset County, and are also considering Hunterdon as well. So, they have to accelerate recycling even further, in order to make their resource recovery facility work as a regional facility.

ASSEMBLYMAN McENROE: I have just one quick question: The recycling rate in some of the more rural counties seems to be considerably less than in some of the more populated counties. You do include industrial waste. Is that why the counties such as Essex and Hudson have a higher--

MS. SHEIL: Yes. For instance, if you look at a county like Burlington-- Burlington concentrated on the designated materials. If I were to take, like, Mercer County, and just show you the list of materials, they would lose about 11% or 12% of that rate. They would drop to maybe 26% or 27%. Whereas Burlington wouldn't change at all, because they concentrated on those materials. They are now moving -- and Bob Schaefer (phonetic spelling) could probably address this better than I could -- into those other materials with the development of their transfer station and their landfill, where they are pulling an awful lot of bulky materials. We expect those rates to accelerate. But they concentrated originally just on the standard of aluminum cans, glass, and paper. But we expect these rates to accelerate greatly in 1989 and 1990.

ASSEMBLYMAN McENROE: And these do reflect industrial waste?

MR. CZAPOR: Exactly.

MS. SHEIL: Yes, these do reflect industrial waste.

MR. CZAPOR: And also, one of the factors that may influence the urban counties showing the higher numbers -- construction and demolition debris through revitalization projects. One thing I think is critical, and we can provide the Committee with this, is that for a little while at least we are still working with two sets of numbers. We are working with the designated materials type of number that focuses on those aspects of the total waste stream that were envisioned to be the target of recycling in mandatory recycling. Then the total waste pie, which is what these numbers are sort of representative of. So we tried to give you sort of a big picture snapshot. But if you want those other numbers, we can certainly provide them.

ASSEMBLYMAN McENROE: Thank you. I wish you would.

MS. SHEIL: And then this last chart just shows how we are implementing that. We always felt when we went into this

program that we really needed to consolidate materials in volume, and we had to have processing centers that would bring up the quality of those materials. And this is beginning to happen statewide, as you can see from this map.

These are regional types of multi-material processing facilities. In addition to this, we have a number of municipal recycling centers-- (balance of statement indiscernible) In some of our counties -- like, Monmouth County has two multi-material processing facilities, and Ocean County has two also planned. So, some of these facilities are on-line; some of them are in the planning process, and due to come on-line at the beginning of next year.

ASSEMBLYMAN McENROE: Thank you. I appreciate your coming here. We scheduled the governmental departments first prior to hearing from the private recycling firms, in order that they could be brought up to the minute on exactly what your progress has been and what your plans are. I would hope that you would remain, or at least representation from your Department would remain, so that comments made by the public would be available to you and I'm sure would be of benefit to you.

The summary comments made about the red tape aspects-- I think it would be well if everyone from the Department stays so you will be aware of some of the concerns people have.

Do you have a question, Assemblyman Shinn?

ASSEMBLYMAN SHINN: I guess generally we are promoting a very positive picture of recycling, but I guess my feeling is we have a lot of problems with it. They go back to the market issue. I know part of the Mandatory Recycling Act had that market study component. I don't know where that all ended up, but I know it didn't materialize the way it was envisioned to materialize.

I think the thing that is going to drive the numbers in recycling, if we are real honest about the whole picture, is the dollars we are going to get for material. Newsprint is one of our major crises right now in recycling. I think all of us know that together. We've got to address that issue. I think glass is probably holding its own. I think plastics have some good signs on the horizon -- private capital investment. Aluminum is not a problem. The bulky waste issue-- There is a lot of money being spent there.

When you get into tires and the lion's share of the waste stream-- Really, when I look at our numbers with the curbside collection program, we are still seeing more than a ton per person per year at the landfill -- at the transfer station. That means there is an awful lot to be done. There is an awful lot of materials in that waste stream that still have to come out. How you get them in a practical sense and find markets for them is the real issue. I would just like to have your thoughts on where we are going from a market standpoint. How do we develop these markets? Do we respond to that item in the Mandatory Recycling Act? Are you still working on that?

MR. CZAPOR: Why don't we take that, I think, in two parts: We certainly can, and would be happy to give you specific information, Assemblyman, on what has been done over the last two years in terms of trying to do some stimulation of markets in New Jersey. Mary has had some direct experience, especially with the paper industry.

In addition, as you know, the Governor's Executive Order sets up an Emergency Solid Waste Assessment Task Force. Very quickly, as you noted, the technical questions relating to what can be recycled become, what is feasible to be recycled; that's marketable; and then what stimulations are necessary to move that along? I think that is a very definite focus of that task force. We will have some recommendations to further those

areas coming out in the next couple of months. But perhaps we can review what has been done a little bit over the last years.

MS. SHEIL: Well, in terms of the paper industry, the Canadians have plans to go into deinking. About 59% of all the paper we use in the United States comes from Canada. What is being looked at is back hauling wastepaper back to Canada when they bring all the brand-new paper down for printing. There are at least four mills up in Canada that are planning deinking processes. Plus we have one major company -- Jefferson Smerfit -- which is looking in the Northeast, and New York, Pennsylvania, and New Jersey are leading states for possible location of a newsprint recycling mill.

You saw an announcement recently by The Star-Ledger and Bowater for plans for a mill and partnership in Tennessee. I think some of the publishing industry, which you will hear from today -- and they certainly can tell you better where they are at this moment -- has made some commitments to using more recycled news. We need to expand the other areas as well.

Marcal Paper, in New Jersey, has just made application for a loan from us. They are doing a \$24 million expansion for increasing their paper, which will include collection of junk mail and magazines, which was something we really couldn't get rid of before.

So, there is a lot going on in the area. Unfortunately, it is not going to happen overnight. These things all take time. It takes time to build a mill. But the stimulus for making those things happen and increasing recycling is the fact that we have this supply. One of the things we are constantly told by these companies which are planning for these new mills is, "We want that guaranteed supply." Here we are sitting with this supply, worrying about that guaranteed demand. So it will continue to be a constant balancing act between supply and demand.

ASSEMBLYMAN SHINN: I just see the lion's share of the burden keeps-- We seem to be saying, "Okay, municipalities and counties, you go do it." There are limited markets out there at best, with a high subsidy factor, and I know we have a good recycling grant program -- limited, but good -- but we still ship the lion's share of this recycling subsidy, if you will, to municipalities and counties. We just sort of have them in the middle. Without that market loosening up-- You know, something has to give. I guess that is my point.

I like the general tone of what you have put before us, but there are a lot of concerns I have about really raising these levels. The worst thing we can do is lull ourselves into believing we can recycle our way out of the solid waste crisis, without other serious alternatives and large percentages to deal with the waste stream. That is where I would like to really focus on what is practical in a time frame, versus what we have to have on-line in that time frame to deal with the solid waste crisis. I think that is one of the issues you have to sort of focus on.

MR. CZAPOR: Well, I think that each one -- if I may pick up on that -- and I agree-- The reason, I think, for trying to break down each -- the total sort of waste stream into components, is to sort of provide the opportunity for that type of debate on each part of the component. And, in fact, we have had a history, and we all know there are often approaches, there are bills, there are ideas, that say, "Let's recycle this part of the waste stream. We can take this out." The question always has to be, how much do we gain from that? If we find there is a really seemingly good idea that generates a reduction in weight or volume of .5% of the waste stream, we may not have attained anything from a solid waste management perspective, but we may, in fact, have tremendous costs associated with attaining that.

So, each one of those components, I think, has to be addressed via the technical feasibility, the liability of the market, and what can be done to stimulate the market and provide for ease of implementation. If all of those criteria are met, I think then it is very fertile ground to move forward on. If not, perhaps it is not the area to focus on, and we focus on how to handle the material outside of recycling.

ASSEMBLYMAN McENROE: Mr. Czapor and Ms. Sheil, the nagging question, as I see it, is: The education of the public relating to recycling. The figures you cite here are impressive. The statistics certainly indicate that there is a movement toward recycling in New Jersey. But there are an awful lot of people in New Jersey who still remain unconcerned with the social obligation, if you will, that we all have toward recycling now.

What is the Department doing? What can we help you with in that area?

MS. SHEIL: Well, we do have 10% of the Fund -- the Recycling Fund -- which totals about \$12 million a year -- the total Fund -- and about \$1.2 million of that goes to education programs. We do a statewide education promotion of recycling which includes a variety of media types of things, as well as courses that are run. We continue to run programs with Rutgers University, and we give grants to the counties to do countywide education programs with their municipalities. We will continue to need intensive education of the public on this issue as to what they can recycle. As we recycle more and more materials, the education must refine itself to getting people and industry to clean up their acts, so that they do produce materials that the recycling industry can manufacture back into new materials.

That is one of the problems, where sometimes you get this glut on the market. It is not really that -- maybe that pure, new newspaper recycling mill can't use it, but they can't

use the junk they are getting with the newspaper. That always becomes a problem. You go to a lower end market every time you commingle more and more materials.

So, as we get them used to recycling, we take a step backward and say, "It's time to clean up your act and begin to do a better job of sorting, and to begin to do a better job of processing this material."

MR. CZAPOR: I think we have also tried to be somewhat innovative. We have a staff within the Division that focuses on education at a range of levels, both from sort of the general public relations outreach type campaign right through to a teacher's guide for the early years, which teachers can use to sort of teach solid waste management principles and teach recycling principles, the theory always being that you can get at the parents and the adults through the children.

I think it is a very effective program, but I absolutely agree that it is one that has to be continued, because so much of the program depends upon citizen cooperation.

ASSEMBLYMAN McENROE: Thank you.

ASSEMBLYMAN SHINN: Mr. Chairman, I have one other question.

ASSEMBLYMAN McENROE: Mr. Shinn?

ASSEMBLYMAN SHINN: The thing we talked about a lot, and I don't think we have affected it at all, is source reduction. You know, more and more it seems like we must take international honors in New Jersey for generating waste per capita. I think that at some point we have to do more than just talk about source reduction.

I am wondering if there are any areas the Department is working on relative to source reduction, and if that issue is being addressed? I know it is a component part of our strategy now. Is there anything behind that that you would like to share with us?

MS. SHEIL: Well, I sit on the Source Reduction Council of CONEG, which is the nine Northeast states that the Governors of those nine states have organized to address source reduction of packaging. The long-term plan is that that would go into other materials as well. But they are looking at source reduction packaging, and have set down guidelines for the packaging industry as to what source reduction means, and preferred packaging guidelines which are: First, no package, and then minimal packaging, where you do need it, and then a reusable, refillable type of packaging, which would be the third step. Then, if you can't refill it or reuse it or you still need a package, it is to be made of recycled materials, and it is to be designed for recycling.

So, that is what they are doing. In New Jersey, we have let a contract with Tellus Institute. After we got involved with that contractor to look at the whole economic and environmental impact of packaging, several other states, under the Council of State Governments, and some of the industries, joined in that to look at packaging as well, and to expand upon the CONEG project.

So, packaging is about 34% by volume of the waste stream. So it is a large component to take a look at. If you are an avid recycler in New Jersey-- For instance, the county I live in where we do all materials-- The last one they are going to bring on-line is tin and bimetal this year. Most of what you throw in your trash can as a resident is a lot of packaging. So when you are an avid recycler, you can really see the impact packaging has on the trash cans.

ASSEMBLYMAN McENROE: Okay. Any further questions from the members of the panel? (no response) We very much appreciate your comments -- your public comments today -- and we primarily will hear today from people who are involved in the various industries relating to the common effort we all share of recycling.

So, again, the availability of this information to the Committee is appreciated. We hope to have the transcripts prepared from this hearing within a few weeks. We would like you to review those carefully, and come back to this Committee with any suggestions or any areas where we can be of assistance to you. Thank you very much.

MR. CZAPOR: Thank you. We have staff available, and information, if you need follow-up on anything we have given you today.

ASSEMBLYMAN McENROE: Okay. Thank you very much.

We will move along. We are going to call for the New Jersey Press Association. I understand they will be represented by Sandra Hardy, Chairperson, Newsprint Resource Task Force, and by Mr. Mark Newhouse, General Manager of The Star-Ledger, and also a member of that Newsprint Resource Task Force.

Good morning, Mr. Newhouse. May I introduce the members of the Committee? On my left, Assemblyman Tom Duch, Passaic County; staff member, Al Matisoska; Assemblyman Dan Jacobson of Monmouth County; and Assemblyman Robert Shinn of Burlington County.

M A R K N E W H O U S E: Good morning. I am Mark Newhouse, General Manager of The Star-Ledger. I would like to thank Assemblyman McEnroe for inviting us to speak to the Committee and the public today on the progress that is being made on the newspaper recycling front in New Jersey.

As you probably know, recycling is not new for newspapers or readers. Newspapers represent one of the most heavily recycled products. About 35% of old newspapers are reused in some way. Some are used for wrapping, animal bedding, or used in the production of insulation, cardboard, or of recycled newsprint.

There are now nine paper mills making recycled newsprint in North America, one in Canada, and eight in the

United States. All nine are now, or were once owned by newspaper publishers. The first of these was the Garden State Paper Company of Garfield which was established by Richard Scudder, then publisher of the Newark News in 1961. Newspapers were recycling even before there was a solid waste crisis.

New Jersey has long been a leader in the environmental arena. We were the first State to establish a mandatory recycling program which included old newspapers. But when neighboring states in the region climbed on the bandwagon, a sudden growth in supply created a temporary glut on the market. Municipalities which as recently as early 1989 could sell old newspapers they collected for \$25 or \$30 a ton, found that the price plummeted to \$5 in some places, to zero in others.

Old newspapers are a commodity, like corn. Grow too much and the price will collapse. This short-term decline has led some to believe that recycling is failing. To answer that concern, some lawmakers have considered regulating the newsprint market to create demand for the old newspapers piling up at collection stations.

This Committee needs to know that public interest and pressure from our readers and from municipalities and the Legislature have accelerated developments to increase recycling as a part of newsprint manufacture. New Jersey newspapers are among those effectively pressing the papermakers to expand their recycling operations, and they are responding positively.

The parent company of The Star-Ledger, The Trenton Times, and The Jersey Journal have recently announced participation in joint ventures with two major newsprint producers to build new paper mills to recycle old newspapers. These two projects alone will use a quantity of old newspapers equivalent to the annual newsprint usage of all New Jersey newspapers. Many other manufacturers have announced similar plans to recycle, often in partnership with other newspaper

publishers. Within two to three years, the paper industry will have spent hundreds of millions of dollars to produce recycled newsprint.

The three Assembly bills now in committee requiring mandatory use of recycled newsprint -- up to 90% of all paper used by 1992 -- present a number of problems. First, the supply of recycled newsprint needed to meet this goal isn't now available, and probably won't be even by 1992. Second, the bills include an unrealistic definition of recycled newsprint which isn't met by some of the papermakers planning new projects. For example, the paper which will be made by the Bowater mill in Tennessee -- one of our joint ventures -- might not qualify under these bills even though it will consume about 120,000 tons of old newspapers per year.

Finally, the penalties included in these bills represent an unfair burden on newspaper publishers. There perhaps is a feeling that publishers should be the ones to pay for the old newspaper problem. In fact, we are already paying, both by direct investments in new plants and through increases in the cost of paper, part of which will go to finance the manufacturers' projects.

In fact, the free market is already actively on the way to solving the old newspaper glut. The stimulus of regulation is not needed. It might even inhibit growth by telling producers how much recycled paper will be required.

Recently introduced legislation providing tax incentives for newspaper deinking plants represents a positive legislative initiative -- the carrot instead of the stick. By providing financial relief to New Jersey's existing recycled newsprint mill, Garden State Paper, and offering incentives to new operators, State government will encourage the substantial investments needed to build these facilities.

In his invitation to speak today, Assemblyman McEnroe asked some specific questions, which I will try to address:

What percentage of used newspapers in the municipal solid waste stream is currently being recycled on a statewide and county-by-county basis?

Frankly, we don't know the answer with precision. I must say that the presentation which preceded mine had a lot of detail which we do not have, and I think really answered some of that question. Paper markets operate on a nationwide or regional basis, not a statewide one, and statistics for New Jersey are just not available to us. We do know that New Jersey newspapers use about 390,000 tons annually. Garden State Paper used about 250,000 tons of old newspapers per year. The Port Authority estimates that another 140,000 tons is exported overseas through New Jersey ports. Obviously, some of that paper is coming from other states. That is why a solution to the solid waste problem must be a regional one. A newsprint mill located in New York or Pennsylvania is just as helpful in using New Jersey's old newspapers as one located here.

What are the institutional impediments, if any, to increasing the amount of used newspapers that may be recycled in the State?

There really are none. New Jersey has a well-organized private sector of wastepaper brokers. The new newsprint projects underway will provide a big increase in demand in the near future.

Are there any specific administrative or legislative measures that may be undertaken to facilitate the growth of newspaper recycling?

We feel that any legislation mandating use will restrict a robust, growing market. The tax incentives under discussion represent a positive step. Ms. Hardy, the next speaker, will discuss possible administrative measures that could help.

Newspaper recycling is alive and well, and it is growing faster than you think. Thank you.

ASSEMBLYMAN McENROE: Thank you very much. Any questions? Mr. Shinn?

ASSEMBLYMAN SHINN: Yes. As the sponsor of several bills that I don't think the publishing industry thought much of, I've got some real concerns on the market, as I expressed earlier. I met with Sandy a couple of times, I think, on recycling issues. I think in the last session we postponed a bill based on how we were going to proceed, to see if we could make some progress with increasing the amount of recycled paper.

Somewhat frustrating to me is the Los Angeles Times at 87% recycled paper. I wonder where they are sourcing their paper versus what we are doing on the East Coast. But when you look at the East Coast numbers, you know, we are significantly lower than what is going on on the West Coast. I assume they are sourcing out of Canada also. I don't know the wood pulp versus the recycled paper processing capital investments, but it struck me as to whether the Los Angeles Times source of recycled paper -- whether it is out of Los Angeles or out of the Canadian market.

I think the bottom line, when you sort of think through that whole process -- and it takes time to convert capital facilities, plug all the variables in, transmission and problems with utilizing recycled paper, and so on and so forth-- It gets down to the point where how we are subsidizing recycling the paper-- We are doing it by a tax on recycled products and grants back to municipalities. But I think that on an overall cost basis, that is a fairly small fraction of what the counties and municipalities are spending on their recycling programs for newsprint.

If nothing else responds to some attractiveness in that market -- and that market is pretty bleak right now from a price standpoint-- A lot of municipalities and counties are

paying -- now, you can correct me if I am wrong -- to get rid of their newsprint. I think that is more commonplace than someone getting paid.

What you end up going back to, I'm sure, wouldn't be very attractive to the newspaper industry, doing what we propose to do. In fact, I was the sponsor of a bill last year which with plastics -- to put a container charge on plastics of two cents. I don't see newspapers as any different than plastics. I think we might be looking, if we don't get more attractiveness in this market, at a similar situation where you just tax the generator of the problem that the municipalities are saddled with in recycling. Put a couple of cents on a newspaper, or a penny on a newspaper to aid in getting that product handled and returned to the marketplace somewhere.

I think you have to look at all the potential, but that is what you come back to. If you run into these dead ends and you say, "Gee, what are we going to do, how are we going to solve this waste problem?" and you start running through the different options, then basically you say, "Gee, the people who are generating this problem really have a responsibility to deal with it." You can't shuffle off to the taxpayers, on any long-term basis. There are transition areas, and I think we all recognize that.

As far as long-term solutions, I think we really have to come to grips with how we are going to resolve this in a time frame, because there is a tax revolt going on out there now, from the local taxpayers' standpoint. We have seen that in our school elections. It is really not against the schools; it is really against increased taxes, because there are more and more demands on local government, and recycling is a large one.

So, I think that in the whole spectrum of things, we have to include that in our thinking. I don't think there are any bills around now, or I don't know of any pending, but that

is certainly out there. If we can't relieve some of this pressure on markets-- I think that is our big issue.

S A N D R A H A R D Y: I am going to be addressing the increases that we foresee at this particular time, and I have a reference to that effect that will be passed out that gives a chart. So maybe I should go ahead with what I'm saying, and then I would be interested in your response after that.

ASSEMBLYMAN McENROE: I would just like to comment, as Chairman of the Committee, that I am not sure I feel comfortable with your using this Committee as a means of promoting taxation, Bob. (laughter) You're talking too much about taxes. We want to stay on the subject. I know you have a long interest in it.

ASSEMBLYMAN JACOBSON: The views set forth do not necessarily represent the views of this Committee.

ASSEMBLYMAN SHINN: Yes, I am sure of that.

ASSEMBLYMAN McENROE: I appreciate your comments and all, but--

ASSEMBLYMAN SHINN: I think to get the whole issue and the perspective of where the funding for recycling is really coming from-- It really comes from that local real estate tax bill. That's the bottom line. Now, unless you look at it in the whole context, it is hard to focus on where we have to resolve the problem.

ASSEMBLYMAN McENROE: But what we really want to do today is stay in the generic area of what we are doing, insofar as cooperative effort with the private sector, with the public sector, in promoting recycling as a real institution and part of our lives in New Jersey. We are really not addressing legislation. What we have, of course, before the Committee-- There are responsible legislators who introduce bills addressing an increase in obligation of the newsprint industry to use a certain amount of recycled newsprint, but that is not really on the table today. We really want to hear from private

industry as to what they are doing, and we want to measure the progress and the success of the program as it moves along.

MS. HARDY: I am Sandra Hardy. I am a member of the American Newspaper Publishers Association Newsprint Task Force, as well as Chairman of the New Jersey Press Association Task Force. I mention that because my focus is more nationwide, as opposed to Mark's, which was more centered in New Jersey. We are doing that because the solving of the newsprint problem is, in fact, a worldwide, as well as a nationwide issue.

I was very impressed with the report from your State. We have had good cooperation in the past, and I am very grateful for that. I think it is impressive, the record of what New Jersey has done. It is a pleasure to be here. I appreciate your taking the time to review and discuss the issue with us.

I hope the general public, the government, and publishers have the same goal, which is to keep the valuable used newsprint resource from entering the solid waste stream.

As Mark mentioned, New Jersey has been a leader, both in having this country's first recycling newsprint plant and also in developing early source separation laws. We owe to you, our representatives, the awareness and motivation of increased publisher participation in the recycling arena.

It may seem unbelievable that publishers initially were unaware of their involvement in the solid waste development, but we knew we were recycling our own waste. Many of us were using recycled newsprint, and there was no excess recycled newsprint on the market. Of the 35% that was recycled, only one-third was put into newsprint and two-thirds were put into other products.

Many of us did not understand the difference between a landfill and a dump. Knowing that newspapers were safe and biodegradable, we were unaware that 68% was accumulating in a dry landfill, but felt it was dissolving in the garbage

stream. However, gubernatorial requests for voluntary goals, legislation, and proposed legislation from various states catapulted us into action. We supported research through our own staff, as well as outside consultants. The investigation confirmed that recycling of discarded newspapers was safe for the environment, was capable of producing a quality comparable to virgin newsprint, was cheaper to produce, assuming lower energy costs and reasonable shipping costs, and was acceptable to subscribers, if they were educated.

We were concerned about the waive of legislation requiring the use of specific quantities of recycled newsprint, because, first, newsprint with a mandated quota was simply not available; and second, regulation of newsprint use, or the market can lead to regulating what we feel is vital to maintaining a democratic society -- this nation's free press. The high level of 35% recycling of used newsprint occurred voluntarily in a free market, because it was economically advantageous to do so; to use a collected, partially processed raw material. However, it took 20 years.

To rapidly increase the current rate requires both a market and a dependable supply of clean, well separated, cost competitive raw material. In September of 1989, to help create a market for old newspapers through increased recycled newsprint production, the American Newspaper Publishers Association developed a policy urging publishers to use as much recycled newsprint as was available, and to request more from their suppliers.

In November 1989, the New Jersey Press Association followed along and did a similar policy. National and State associations supported the policies with intensive publisher education programs. Publishers not only requested more recycled paper, but in many instances they told suppliers that future contracts for newsprint would depend upon the supplier's ability to provide recycled paper. Newsprint companies have

responded, as Mark mentioned. The capacity is increasing at a rate even faster than we thought possible. We believe this has occurred for two reasons:

First, the research and infrastructure for recycling used newspaper existed; and second, because of the rapid response of publishers to create demand. As you can see from this graph -- and I hope you have it by now; it is on a yellow sheet of paper to make it easier to identify -- entitled, "Recycled Newsprint Capacity in North America": "The supply is expected to increase by 125% over the 1989 figure. The capacity will move from 2.04 million to 4.6 million short tons by 1992." The 150% figure you see on your chart refers to an increase from 1983, so there is a very clear escalation there based on our going back to suppliers and creating a demand.

In conjunction with Earth Day and our national convention, ANPA urged publishers to use the recycled newsprint for as much as 28% of their consumption. In other words, we encouraged newspapers to continue to use as much recycled newsprint as the North American mills are capable of producing. I have a press release attached to your chart for your benefit. This graph has been developed using only projects that have provided ANPA with the results of completed engineering studies and start-up dates. The recent announcement by the Jefferson Smurfit group for a new recycling mill in the Northeast is not included, because a start-up date is yet to be announced.

However, we expect the project to proceed, and it will provide another 275,000 short tons of recycled paper, and it will consume another 330,000 short tons of used newspapers. Twenty-three other North American mills are investing in feasibility studies, and again, the list is provided for your convenience. However, for these manufacturers to feel comfortable enough to continue to increase the supply of recycled newsprint, they need reliable data on collection

rates. This is the comment that Mary was referring to. Some newsprint suppliers tell us that their current projections indicate a possible shortage of used newspaper in five to ten years. With no hard data and a lack of history of America's ability to maintain high recovery rates, these manufacturers are hesitant to invest in deinking and recycled newsprint facilities.

The ANPA is currently funding a Franklin Associates Study of National Reporting and Recovery Rates. Knowledge of current collection practices is critical to ensure that additional recycling capacity adds to the solid waste removal, rather than simply diverting ONP from current markets. We will report the Study's findings as soon as they are available.

From ANPA's information, New Jersey has one of the nation's best reporting systems, and yet New Jersey's information comes only from cooperating municipalities. Private brokers, from what I understand, do not report to the State. Perhaps if there is a licensing requirement, qualification could be tied to an annual reporting cycle which could be used by newsprint companies.

In addition, we need to be sure that we are collecting and preparing a resource in a manner that best suits its end -- reuse. Potential purchasers need to be directed to a central information system that can further direct them to recycling agents who are able to comply with manufacturing specifications. Perhaps New Jersey could develop or sponsor a program to gather buyers and sellers together for an opportunity to meet, make contacts, and to share educational information to help both in the new commodities market that the State recycling centers have created.

There is another major area of concern and Mary touched on this, so maybe it is not as much as it was even a week ago. This is a topic, by the way, that seems to change almost by the hour. That is the newsprint that goes into the

third class mail stream. Our competitors are not under pressure to use recycled newsprint or to pay for the cost of retooling to increase the supply of recycled paper. The current and proposed third class rate structure was designed to provide a strong incentive for increased volume. This will continue to produce newsprint solid waste over which publishers have no control.

Current technology only permits limited quantities of slick paper to enter the recycling stream. This limit, for the most part, is already included in products inserted and recycled with the newspaper package. I might add that I had a discussion with Mary a week ago, and she asked me to mention that in particular, because it had been a concern. As I said, she addressed it today. It may be less so now.

To help to prevent landfill disposal of used newspapers in areas where a depressed price has prevented the sale, newspapers are working with local communities and their farmers. In two-and-a-half months, one newspaper-sponsored program in a medium-sized western Pennsylvania community distributed over 57,000 tons of old newspapers to dairy farmers. Prisons are already using ONP for animals in New Jersey, and, if necessary, New Jersey publishers in farming communities will also participate.

Unfortunately, to date, the only real indicator we have to monitor supply has been the price paid for ONP. Two recycling trade publications and a Maryland State study report report that there is no longer an oversupply. Stories in The Wall Street Journal and recycling publications indicate that the price will now begin to rise.

We believe the excess used newspaper problem has been solved. We are simply experiencing the inevitable time lag required for increasing production capacity. The newspaper publishers' problem is one of misperception. People are unaware of our efforts. To inform the public about our concern

and/or our activities, we have begun an extensive promotion campaign. We participated in Earth Day activities and have provided ads for member newspapers, and State associations are collecting and sharing ads done by newspapers across the country. Again, you have samples.

Excuse me, I need some water. (coughing) Gee, at C&M they always have it.

ASSEMBLYMAN McENROE: We're working on a limited budget this year. (laughter) Sorry, I apologize. (sends someone for water)

MS. HARDY: It's a precious commodity; I know that. I'll show you my tee shirt in the meantime. We are going to this extent. (holds up tee shirt) I had hoped to give you all some, but they sold out at our national convention. They are very popular, and newspapers are getting on the bandwagon.

We will all continue to work on new ideas, and will continue to promote recycling. Newspaper participation has been as active here as it has been in creating demand for recycled newsprint. Newspapers want to continue to be good citizens in their communities. It is possible that with the projects already begun, the ONP supply will be consumed. There is a 15% to 20% waste factor with each recycling. In addition, scheduled newsprint increases doubled greater than one-third of what was already recycled, and other ONP uses are continuing to grow. For instance--

MR. NEWHOUSE: (Mr. Newhouse continues Ms. Hardy's statement here due to her being unable to stop coughing) For instance, there is a new recycled used newsprint boxboard plant scheduled to be announced soon. Further, we will always have a need for virgin fiber. A New York State Task Force reports that 50% virgin fiber will be required in the recycling stream. Land is one of America's best assets. I feel that managed forests provide an excellent use for that land. This

long-term agricultural crop offers advantages identical to the virgin forest.

Managed forests provide jobs for researchers and caretakers, as well as cutting teams. They provide a home for birds and other wildlife, a recreational area for families, and a lush green area that filters heavy metals from the air and provides oxygen to our atmosphere. And, finally, the hundreds of thousands of forested acres owned and planted by newsprint companies provide a revenue stream. This revenue protects these woodlands by offsetting the temptation for owners to sell land to developers. We should preserve as much virgin forest as possible. However, in addition, the long-term agricultural crop of trees that become paper can be traded for good value to countries which are overpopulated and have limited arable land.

We believe we have stimulated free market projects that will balance the demand for used newspaper with the supply. As current projects come on-line and our monitoring of the solid waste stream is in place, we will adjust for any imbalance. Newspaper publishers are committed to continue to work with the public and government at all levels to ensure the balance that protects our environment and the natural beauty we all share.

Thank you.

ASSEMBLYMAN McENROE: Thank you. Is there a limit the industry has placed on the opportunity, then, for recycling of newsprint? I mean, are you indicating that you will still need virgin pulp for the preparation of 50% of your material?

MS. HARDY: I gave that figure because it has been a figure that has been established by research by one of the task forces, and there is the possibility that we will require that much. That does not concern us, because that deals with newsprint. It does not deal with the other uses for recycling that occur with paper. But I think it is important that you understand that it does relate when we are talking about

mandatory quotas or mandatory percentage of fiber content, because the product itself can only have so much recycled product, that has been recycled so many times, in order to be viable and not see through.

MR. NEWHOUSE: In other words, you cannot keep recycling the same fibers over and over again.

ASSEMBLYMAN McENROE: It loses quality too much, yeah.

MR. NEWHOUSE: We would just end up with mush. We wouldn't be able to make the fiber--

MS. HARDY: They get shorter and weaker with each recycling.

ASSEMBLYMAN McENROE: Okay. Mr. Shinn?

ASSEMBLYMAN SHINN: I just have a comment on the market and the supply/demand issue. I think you could-- Some of the studies, I would think, would lead you in a different direction than the reality, quite frankly, because of a lot of the things that are going on in the recycling market. Just because there isn't any market for newsprint, people are trying all sorts of things to shred it, to inject it into the soil, to use it for animal bedding, but they are all sort of expensive processes, which also need to be subsidized.

You don't make any money on that process. Even after you get it off the curb, you have to put it through a shredding process. I don't know of anyone who is really profiting off of it. It is a way to dispose of it other than landfilling. But I would think, if you could use Mary's office as a resource, you could line up some people who would be willing to contract, on a long-term basis, very quickly. Counties, I know-- If there were a number involved with it, we would certainly be anxious to sign a contract. I know there are probably hundreds of municipalities in other counties out there that would jump at a chance to contract for a long-term waste stream. I think that is what you are alluding to.

MS. HARDY: You would be unique.

ASSEMBLYMAN SHINN: Recycling is like the chicken and the egg. You need a commitment for someone to buy it; you need a commitment from the source; and you need for the manufacturer to invest capital dollars in producing the product. But I think all the pieces are there. I don't think there is any question about that. It is just tapping the right resource to get to where the generation really is, but there is a horrendous amount of generation going begging right now for a market.

MS. HARDY: I know it is, right now, but even in Pennsylvania, where Laidlaw (phonetic spelling), who is affiliated with Canadian Pacific -- this is one of the mills that is going on-stream -- has tried to contract with the communities there for a 20-year contract. They were unwilling -- the communities were unwilling -- to sign those contracts, because they felt that the price would perhaps go greater than what Laidlaw was willing to pay, looking at the market today.

So, to date, they have not been able to work out an arrangement. That has been going on for a number of months. We were very hopeful when we saw that. We thought that a municipality would, in fact, jump at that. Even in areas of Pennsylvania that are going to farmers, they are paying at least \$15 a ton. That is still less to them than the price paid for straw in Pennsylvania and, in fact, they are doing all the processing. The communities are not doing it.

We have started some pilot projects where they are putting in facilities to do the processing for the farmers, but they have only been pilot projects. In many instances, the farmers have their own equipment and are willing to pay certainly more than zero.

I agree with you that the market is there. We have had no experience and no solid success in being able to contract with the newsprint companies. Perhaps we can try New

Jersey. I certainly will get back to the people from Canadian Pacific and offer that.

ASSEMBLYMAN SHINN: One of the concerns that municipalities and counties have-- If you go back three years in the market, probably at a high point of maybe \$37 a ton down to paying \$19 or \$20 a ton, trying to pick a number without some reference point for escalation is a high risk business, because basically they are subsidizing that collection. So, the sensitivity on the long-term market is strictly by, you know-- If they sign a 20-year contract at \$10 a ton and the price goes to \$40--

MS. HARDY: Laidlaw was offering \$25.

ASSEMBLYMAN SHINN: --they are subsidizing something that they don't have to. So you really need an escalator reference in that market number.

MS. HARDY: It is very hard.

ASSEMBLYMAN SHINN: We can't use prime, because it is not effective, but some reference number that would adjust the rate--

MS. HARDY: They did actually change it. They were offering initially \$20 or \$25, and then when they had a problem with the municipalities, they came back and offered a cost of living increase -- or, I mean, a cost of annual rate increase, and the communities were still unwilling to participate. That surprised us all, but I don't know a lot of the ins and outs.

Jefferson Smerfit tried to do a venture project with Waste Management, in order to combine collection and production. While they are still talking, they no longer have a venture program set up. So, again, apparently there are real difficulties in coordinating transportation and pickup with getting it to the right place at the right time, and being able to satisfy everybody in terms of price.

That is one of the reasons I suggested the forum, or some way that-- We need to know what those problems are; I

think you need to know what they are, so that we can solve that issue. Clearly it is a frustration for the communities. In my opinion, it is a frustration to the newsprint manufacturers, as well, and these are not our studies. These are highly expensive studies that these newsprint mills are paying for, and finding that there is probably going to be no supply in the five- to ten-year period.

ASSEMBLYMAN McENROE: Thank you. One comment you made regarding the glut coming somewhat to an end very shortly-- Do you have any measurement of that? I mean, are we going to expect the glut on the market to exist for another two years, or three years?

MR. NEWHOUSE: The handout you got -- this one (holding it up) -- is a trade publication for the used paper market. It is dated last week. The lead article quotes some experts saying they expect the price to rise by the end of this year.

MS. HARDY: I have one as well, and also in this other package, there is a New York Times article which refers to the time frame and, in addition, even more practical than that, I had a meeting yesterday with one of our papers, and we are now selling our waste again.

ASSEMBLYMAN McENROE: Very good.

MS. HARDY: For a good amount, so, it's back.

ASSEMBLYMAN McENROE: One other comment before you leave: On the chart, where you indicated before that there has been such a growth in recycling-- Will we expect that curve to move upward?

MS. HARDY: Continue to go upward?

ASSEMBLYMAN McENROE: Is there a prediction there that by the year 2000 there will be--

MS. HARDY: The continuation clearly is within the hands of the 23 other mills that are listed on your chart. It goes back to being able to assure them that there will be a

supply in our minds. There are some which I think will go forward just on the economics, but we have no real commitments to that effect.

MR. NEWHOUSE: Well, each additional project that is announced makes the remaining ones have a bigger question about whether the supply will be there.

ASSEMBLYMAN McENROE: Well, thank you very much. You know, I appreciate fully the sensitive area when you find a Legislature, a governing body, involving itself in the supply of newsprint to a free press. I appreciate your coming before us today and commenting. I do believe that in my own experience in the meetings I have held with the Task Force that there is a sense of responsibility and a genuine effort to coordinate your activities with those of the Legislature. We have an obligation -- we are in the law-making business -- but there is no need for restrictive legislation, when we have cooperation from a public entity such as the publications area.

We expect your cooperation. We have had it; it will continue. We hope that the communications that currently exist-- We hope you will avail yourselves of the expertise the Department has, in order that all of us can reach our common goal. So, thank you very much. We appreciate it.

MR. NEWHOUSE: Thank you, too.

MS. HARDY: Thank you.

ASSEMBLYMAN McENROE: We will move along. Next we will have, representing the New Jersey Glass Recycling Association, Executive Director, Mr. Mel Hintz, please.

Good morning, gentlemen. We have three individuals: Mr. Charles Miller, Mr. Mel Hintz, and Mr. Rodger Wangerien. Is that correct?

M E L H I N T Z: That's correct.

ASSEMBLYMAN McENROE: Welcome. You may proceed.

MR. HINTZ: Thank you. Chairman McEnroe, distinguished members of the Committee: Thank you very much

for giving the New Jersey Glass Recycling Association the opportunity to appear before this Committee to discuss glass recycling in New Jersey.

Permit me first to give you a brief background on the New Jersey Glass Recycling Association and just what we do in the State. The New Jersey Glass Recycling Association was founded in the fall of 1986, and officially announced itself at a press conference here in this building on December 15 of 1986. The New Jersey Glass Recycling Association does not buy or sell glass. Its sole purpose is to promote glass recycling in New Jersey, and to assist the State, the counties, and the municipalities in promoting glass recycling programs.

We work with both public and private schools, from kindergarten through the university level, and with a wide range of organizations, including senior citizens, Scouts, civic and religious organizations, and environmental groups. A few of our activities include creating printed materials, newsletters, brochures, and other visual aids on glass recycling for the general public; conducting a speakers' bureau; conducting annual regional seminars for county and municipal recycling coordinators; serving as public relations contacts and liaisons with the media, and responding to the inquiries and requests that come in from throughout New Jersey; in fact, throughout the United States, and even from around the world.

The Association is sponsored by the New Jersey glass industry. Members of the glass companies form the Association Board of Directors, and the Association is funded by both management and union members of the glass plants. The union members take a personal interest in the Association and many of them are members of the Glass Awareness Committee. Committee members help to promote glass recycling in their areas and volunteer their time to help the Association increase glass recycling throughout the State. Each of the nearly 2800

employees in the member plants donates 10 cents for every hour they work to help to promote glass recycling in New Jersey.

How is glass recycling faring in New Jersey? According to tonnage grounds figures from the New Jersey Office of Recycling, New Jersey residents recycled the following amounts during the last five years of recorded tonnages: 1984, 20,861.2 tons; 1985, 25,603.5 tons; 1986, 31,235.5 tons; 1987, 42,941.9 tons; and 1988, 75,618.1 tons. You will note that during 1987, the year when recycling became mandatory, New Jersey residents turned in some 43 tons of glass to be recycled. But in 1988, the first full year of the program, and the latest year from which we have figures, the tonnage leaped to more than 75,000 tons. That is an increase of 76.1% in one year. Because last year -- 1989 -- these existing programs were even further developed, and because additional counties and municipalities ended the mandatory recycling program, all indications are that the recycling figures for 1989 will be even more impressive.

But that is not all. The 75,000 tons listed for 1988 include only the glass that was source separated at curbside or at municipal recycling centers. The tonnage grounds for 1988 do not, by law, include the glass that was recycled in commingled programs. State Office of Recycling figures indicate that an additional 47,273.4 tons of glass were connected through commingled recycling programs in 1988, as opposed to only 12,519 tons from '87's commingled program. This now brings the glass recycling tonnage for '88 to over 122,000 tons.

As a third item, the Office of Recycling also lists a category of disallowed tonnage, or underreportings; that is, recycled materials that are collected but not recorded. That would include, for example, commercial businesses that recycle, but do not want to be bothered with the paperwork. Disallowed

tonnages could include up to an additional 4000 or 5000 tons of glass, which would then bring the figures well over 125,000 tons.

But even without counting those figures in the final category, the '88 tonnage would still stand at nearly 123,000 tons. That is more than 67,000 tons more than was recorded in '87, and more than 18,000 more tons than were predicted for '88 in the Irwin P. Sharpe Report. Now, what is the Irwin P. Sharpe Report? That is a study that the Glass Packaging Institute and the New Jersey Glass Recycling Association contracted Irwin P. Sharpe and Associates of West Orange to conduct in New Jersey. That was completed in November of '88.

The purpose of this study was to identify the percentage of container glass that is being recycled in New Jersey. Due to the availability of information on glass that was being recycled at that time, the time frame of the study covered 1987, and by projection based on figures for the first four months of 1988. We will submit a copy of that report to the Committee.

Briefly, however, the result of the comprehensive study indicates that 350,000 tons of glass containers were sold in New Jersey in 1987, and that 14.3% of the glass was recycled. Based on the recycling data for the first four months of 1988, the report estimated that at least 25% of the glass containers would be recycled for the full year of 1988.

Now, there are no glass container statistics for '88, but if we keep the same figure -- 350,000 tons of containers for New Jersey -- the glass recycling figure for '88 is more than 35%, or 10% above the 25% solid waste mandate. Even if we increase the figure of glass containers sold in New Jersey in '88 by 5%, the glass recycling rate would still be at 33.5%. Now, these percentages are not laurels upon which to rest, but they do indicate that New Jersey residents are supporting the recycling program.

Can the New Jersey glass industry absorb all this recycled glass? Let's look at the market. As far as the New Jersey market for recycled glass is concerned, it is a very good market. It is a stable market. The prices have remained consistent with those in effect prior to mandatory recycling in the State. The glass industry has a ready market for more cullet or recycled glass.

At this point, the New Jersey glass industry averages close to 35% cullet in the batch. That is up from some 25% last year. How high a percentage can the glass industry use? It would be much happier to have percentages ranging up to 60% to 70% or higher, but it can only use as much quality cullet as the public supplies, and it uses all that it buys

It is interesting to note that the glass recycling program provides the opportunity for materials to be collected in New Jersey, processed in New Jersey, recycled into new containers in New Jersey, filled with a product in New Jersey, and sold again in New Jersey. How many other industries can make that claim?

Are there any specific administrative or legislative measures that may be undertaken or enacted to facilitate the growth of glass recycling in New Jersey? Certainly the glass industry would look with favor and would support any measures that will advance the cause of recycling in the State.

Although the New Jersey Glass Recycling Association does not involve itself with the manner in which the counties and municipalities collect their recyclables, the figures will show that those municipalities with a color-separated, curbside collection glass recycling program send a far higher percentage of cullet to the glass factories for recycling than those municipalities which opt for commingled programs. The higher percentage of broken, color-mixed glass that inevitably results from commingled programs precludes its use as a raw material in

the manufacture of new glass containers. So there is a problem with what to do with color-mixed cullet that cannot be used by the glass container industry.

There are at least two possibilities. The New Jersey Legislature may want to consider legislation to use mixed waste glass in these two product areas, rather than have it sent to a landfill: 1) mandate the use of glass aggregates for asphalt and road surfacing and as a sub-base in road construction; 2) include crushed glass in site drainage and change building codes to include crushed glass in French drains.

Do the citizens of New Jersey support the mandatory recycling program? Let me close with a simple fact: Last year, the New Jersey Glass Recycling Association presented its annual glass recycling award to the town of Haddonfield for leading New Jersey by recycling 65.2 pounds of glass per capita for 1987. This year, we presented an award to the municipality of Brielle in Monmouth County for its outstanding color-separated, curbside program that recycled 117.4 pounds of glass per capita for 1988. And we presented a second award to the small municipality of Stone Harbor in Cape May County, which collected, with the help of a very large and a very thirsty summer population, 411.3 pounds of glass per capita during 1988. With good reason, the New Jersey Glass Recycling Association salutes the people of New Jersey.

Mr. Chairman, members of the Committee, thank you very much for giving our Association the opportunity to present this information at this hearing.

ASSEMBLYMAN McENROE: Thank you very much, Mr. Hintz. A question I have on the-- Your figures are impressive, but we do have 11 million tons of waste in New Jersey. The recycling tonnage for 1988 is 122,000 tons. That is a long way from 11 million. Are glass bottles just that small percentage of the waste stream? What is the percentage of glass bottles in our waste stream? Does anyone have that figure?

MR. HINTZ: I think the figure that is usually used is 8%.

ASSEMBLYMAN McENROE: Eight percent?

MR. HINTZ: Yes, and these figures come from the State.

ASSEMBLYMAN McENROE: Let's see, 8% of 11 million tons would be quite a substantial number over a million tons of waste that would then be glass.

ASSEMBLYMAN SHINN: Eight-hundred-and-80 thousand.

ASSEMBLYMAN McENROE: Eight-hundred-and-80 thousand, and yet the recycling figure that you present for 1988 -- the tonnage-- The total tonnage is 122,891.

C H A S. M I L L E R: Mr. Chairman, I am Chas. Miller, Director of Recycling for the Glass Packaging Institute. The State figures showed 3.5% of the waste stream is glass. What we did was a shelf study, which is explained in the packet of materials you got, where we went to the retailers and the wholesalers and distributors throughout the State, to try to determine how much glass is actually available for sale within the State of New Jersey. That study came up with the figure 350,000 tons. We believe that is a fairly accurate figure for the amount of glass containers that are available in New Jersey.

ASSEMBLYMAN McENROE: Thank you. Any questions from the Committee? (no response) Gentlemen, we appreciate your comments. It appears, of course, from our own review of recycling, that the glass industry has been cooperative.

MR. MILLER: Mr. McEnroe, if I might add one or two points: Rodger Wangerien, from the Owens-Brockway plant in Freehold, would like to make one or two comments about the actual manufacturing process.

R O D G E R W A N G E R I E N: Just briefly, in trying to address the needs of the Committee and the needs of the industry in the recycling of glass, yes, we have had some successes, but those successes were not achieved overnight. If anything, certainly they could not have been achieved without

the effort that went into the original legislation; that is, the activity of the Office of Recycling, the activities on the part of the county coordinators, and the activities on the part of the municipal coordinators.

Certainly, to look at a mandated situation and what vast amounts of materials would suddenly come on-stream, was approached with some trepidation. Fortunately, that did not happen. The people of New Jersey responded to that preparation, to that anticipation, with providing us with a very good quality. The growth and development of those programs-- When we first started out, we were dealing with individuals who wanted to become recyclers from a financial standpoint. Glass still remains a viable financial source of income for businesses. Charity groups use it as a form of fund-raisers, and now municipalities have opted to do their own programs, rather than joining into some other collective type programs.

So, there seems to be a trade-off between the convenience and compliance and the method in which it is collected. But if there is anything the Legislature can do, it is to acknowledge the roles that these recyclers play, whether they be county programs, municipal programs, or individuals in the collection and separation of the material and getting it to our market.

Some of the things that we have done in Freehold in order to anticipate it are: We have installed a new truck scale. We have made additional storage facilities. We have made major improvements on the processor; that is, we have attempted to remove some of the metal contaminants caused by lids and snap rings. We have also reopened a rail line that was previously used a number of years ago, to be able to get some of the colored materials to the markets where they can be melted.

During 1989, there was no surplus or backlog of the material. The demand for flint cullet remains very strong, and an increasing supply is important to our industry. We experienced, during 1989, a severe weather problem -- if you can remember -- out in the West, which caused the glass industry some severe shortages of raw materials. At that time, it clearly demonstrated the need for a strong, viable supply of cullet. At that time, Freehold was very fortunate to be able to maintain our operation at full level due to the ability to get our hands on clean cullet.

Perhaps the issue most pressing is the quality of the glass that we receive. It is the critical issue in recycling. The industry has the potential to recycle 100% of our post consumer bottles and jars. The technology-- We can send out-- We represent not only what we melt here in Freehold, but we are part of a company that uses glass throughout the United States.

ASSEMBLYMAN McENROE: Mr. Wangerien, the question of mixed cullet-- What does it have to be separated? Why can't it be mixed?

MR. WANGERIEN: We cannot take the color out of the glass once it is manufactured, Mr. Chairman.

ASSEMBLYMAN McENROE: And there is no acceptable way of mixing those recycled--

MR. WANGERIEN: Well, there is a consumer demand for clear or flint glass for certain packages. There is a consumer demand for amber packaging and for green packaging. Once we put that chemically into the glass, it remains there and becomes inert. We could come out with some strange color. There are certain levels, and we have worked with municipalities on those levels, accepting those levels that we can which allow them to attempt to handle it. Where we run into difficulty is if--

ASSEMBLYMAN McENROE: Because the more convenient we make recycling, the more cooperation we will have.

MR. WANGERIEN: Exactly.

MR. MILLER: Part of the problem we have, Mr. McEnroe, is that unfortunately our customers don't want to buy the color of the day. They have very specific standards for clear containers and amber containers and green containers, and as an industry we have to meet those requirements, or not be able to sell the product.

MR. WANGERIEN: I think the issue there, particularly as Mr. Hintz talked to earlier about the need for an alternative to the -- I am going to call them "dregs," for want of a better word -- that is, the mixed material, the material that has contaminants in it, that cannot be recycled because it has contaminants in it-- What we had seen before, was that suddenly in New Jersey a market opened up for mixed cullet, but that was a small market, and many towns opted to go to that market. Therefore, we had a tremendous glut, and the State had all this mixed material we couldn't get rid of.

A good color-separated product, free of contaminants, can be made into a new package without any deterioration. We can continue to do that with a total closed loop situation in the manufacturing progress. So, really, the future of a closed loop system depends on maintaining those programs that are going to put out a pure product.

As we recycle-- I didn't want to skip over the issue of contamination, I'm sorry, because it is such a critical issue. What we have seen in the contamination is the influx of ceramics, pottery, gravel, rocks, tempered glass, light bulbs, and windshields coming in from programs. The number of programs we dealt with about four or five years ago came to us with a great deal of education, and the need to understand the market's requirements for quality control. They put out a

package and they have never, to my knowledge, had any problem marketing their material.

As we went to a lot of intermediary processors who do accept commingled -- and there is some contamination in the commingled -- fortunately, or unfortunately, we know the quality control risks in the minds of the people. It is when you put it out on the curb, if you can keep the lid off it, keep the ceramic closures off the containers, keep those materials out of it when you put it out on the curb, that will go further than any technology that is not there yet to remove those types of contaminants.

And New Jersey citizens historically do that. They have responded extremely well. The material that I get from a community like a Brielle or a Cape May or some of the other communities is as pristine as we would get from the best recycler in the business.

The other issue I think you touched upon earlier, Mr. Chairman, was the educational issue. That is the key. We have a responsibility, and we work in cooperation with the State; we work in cooperation with other industries to provide that education. We have had seminars for the county coordinators. We have had seminars for public works officials, haulers, anyone who is going to be involved in it, so that they understand the market. We will continue to do that.

Perhaps one of my most enjoyable activities is going to the schools. It's true, there are a great many people out there who do not recognize recycling. But when I first went to the first school I went to, about 10 years ago, I don't think there was a child in the room who knew that a glass package was recyclable. I just came back from a PTA meeting last year in Mr. Hintz's county, where those people not only understood that a glass package was a recyclable package, but they were also very cognizant of the solid waste issues facing the State of New Jersey.

I believe the citizens of New Jersey have embraced the issue. I think we've got to walk that next step, which is the next 50%, and that is going to be harder than the first 50%, because the first 50% were very community minded. With the next 50%, we are going to have to do a lot of work, but we are here to help.

ASSEMBLYMAN McENROE: Thank you.

MR. MILLER: Mr. McEnroe, if I may add one or two points--

ASSEMBLYMAN McENROE: Yes, but we would like to move along. Go ahead.

MR. MILLER: Thank you. From 1976 to 1981, I handled recycling for the USCPA. In 1978, we did what I think was our first recycling seminar, and it was held here in New Jersey. Back then what you had was maybe 24 programs across the country which did multi-material recycling. Here in New Jersey you had Montclair and one or two other communities. We attracted about 250 people to that seminar. It was very successful. I think we have seen tremendous changes in the State in the years following that.

Recently I saw some statistics in "Biocycle" magazine that showed recycling rates reported by all 50 states in the country to that magazine. The two highest states happened to be Pacific rim states that have absolutely extraordinary export markets -- Washington State at a 29% recycling rate, Oregon State at a 22% recycling rate. New Jersey is the third highest state at an 18% rate. The next state in this area was Rhode Island, with a 13% rate. I think that speaks volumes about what a comprehensive recycling law can do in a state, especially given the disadvantage New Jersey has for markets compared to the Pacific rim states.

We think very highly of the New Jersey law. We think we are going to see much higher numbers in 1989 for recycling rates.

ASSEMBLYMAN McENROE: Thank you very much. Any comments or questions from the members of the Committee? Mr. Shinn?

ASSEMBLYMAN SHINN: Since the bottle bill scenario, I think the glass industry has stepped up to the plate, and I think that is a tribute to you. I usually chide people about recycling and whatnot, but I think-- Obviously, there is more for all of us to do, but I think the glass industry has really responded well during the past several years, has offered a stable market for its product, and has helped in the processing from recyclers. I think you have done well. There is a lot more to do, as you pointed out, but I think you have participated well in the process.

MR. HINTZ: Thank you very much.

ASSEMBLYMAN McENROE: Thank you. We appreciate your time before our Committee.

We next have on our list Mr. Charles Connelly -- "Chip" Connelly -- Executive Director, Plastic Recycling Corporation of New Jersey. Mr. Connelly, if you are in attendance--

C H A R L E S E. "C H I P" C O N N E L L Y: I'm here.

ASSEMBLYMAN McENROE: Do you wish to have anyone with you, or will you take us on just as you are?

MR. CONNELLY: I'll take you on all by myself.

ASSEMBLYMAN McENROE: Thank you. I want to welcome Mr. Connelly. I had an opportunity to meet with him earlier. The plastics industry is certainly not under fire, but there are certainly many questions relating to its involvement in recycling. I know the past years have shown a dramatic increase in the interest level within the industry in the recycling opportunities in New Jersey, and we appreciate your coming before us.

I know if there is one category, or any category that we review today with a special concern, it is plastics. There

is considerable commitment by the industry toward the enhancement of plastic recycling in New Jersey, and we in the Legislature are on the threshold, if you will, of consideration of a major effort -- major assistance in the area of plastics recycling. We know it is a very visible part of our waste stream. It is a matter of major aesthetic concern. In the area of economics and the environmental aspects of improved recycling in New Jersey, plastics are in the forefront.

So, we welcome you, and hope you have an aggressive report for us.

MR. CONNELLY: Thank you, Mr. Chairman. I am the Executive Director of the Plastic Recycling Corporation of New Jersey. That is a nonprofit corporation which is funded by local soft drink bottlers and the National Association for Plastic Container Recovery, which is an organization composed of the people who manufacture plastic soft drink bottles. We began operating in the beginning of 1988. Our activities include providing assistance to counties and municipalities, as well as private sector recyclers in the form of capital equipment, public education assistance, marketing assistance, and technical assistance.

When we began operating, our program was over three municipalities in New Jersey recycling plastic. Today, as of May 1, there are 233. This covers about three million people. Of the curbside collection programs in the State, 35% of them now include plastic.

In those municipalities where there are programs, in total the collection rate for plastic soft drink bottles -- which is the kind of material we track -- is 54.5%. The annualized statewide recycling rate, assuming that collection continues at the level where it is today for a year, will be 13%. So we feel we have made some significant progress in the area.

In looking at the recycling situation in New Jersey, the original Recycling Act required that municipalities recycle leaves and three other materials. The three logical materials at that time were newspaper, glass, and aluminum. Consequently, our efforts were directed toward getting municipalities which had established recycling programs to add yet another material which was not required by law and, in fact, was a light material so it did not impact, in a significant way, on their Tonnage Grant Program. We looked at the cost of adding plastic bottles to a program. We contracted with a company called Temple, Barker & Sloan, which is an economic consulting firm in Washington that does a lot of work for the Federal Environmental Protection Agency.

They studied five towns and found that the incremental cost to add plastic beverage containers to well-designed existing programs was, in fact, enough benefit when the avoidance of landfill costs were included. That benefit, on an annual basis, in those five communities which were studied, ranged from \$2600 in Upper Township, Cape May County, to \$21,000 in Paramus.

ASSEMBLYMAN McENROE: Excuse me. So you are submitting that there is an economic and environmental profit -- benefit to the municipalities?

MR. CONNELLY: Well, there is clearly an environmental benefit. The economic benefit, in a well-designed program, when landfill costs avoidance is included in the equation, is there. Now, it is not a large benefit, but it is not a cost. In some cases -- it wasn't in the towns that we studied -- it may be a cost, but you would logically conclude that it was not going to be a large cost, if you look at--

ASSEMBLYMAN McENROE: And it is wholly beneficial.

MR. CONNELLY: --the range we are talking about economically. I have the study. I have copies of it which I will leave with you.

We also looked at the attitudes of the public toward recycling plastic, because a lot of recycling coordinators will say, "I can't get the residents in my town to add another material. It is too much trouble." That is not necessarily directed at plastic; that is just a general comment about adding a fourth material.

What we asked them, along with a series of other questions about how they felt things were going in the State, what the major issues were, and things like that, was a question that said there was a bill that would require that plastic beverage containers be separated out and be recycled just like glass and aluminum beverage containers. The results of that opinion survey were that 89% of the people surveyed said, "Yes, that is a good idea." That survey was conducted by a company called Market Opinion Research in Washington, D.C. They are nationally known for that type of work, and I have copies of that for you also.

The impediments we have seen -- although we believe we have made significant progress -- are that the law requires three materials. A lot of towns are doing three materials in addition to leaves, and they really don't want to do a fourth material. Our contention is that you have to go beyond those three materials if you are going to meet the objectives of the Mandatory Recycling Act, and certainly have to go beyond those materials if you are going to reach the higher percentage levels of recycling that are currently being talked about within the State government.

The other impediment is that the Tonnage Grant Program, of course, is based on weight. Plastic bottles-- The primary advantage of them is that they are light, and consequently they are penalized in comparison with other materials by the Tonnage Grant Program.

There is a bill in the Legislature to require recycling of plastic beverage containers. We support that

bill. We intend to continue working with counties and municipalities, as well as private processors to further the recycling of plastic in the State, and we look forward to continued progress in meeting these objectives.

I would be glad to answer any questions.

ASSEMBLYMAN McENROE: Mr. Connelly, the impact of the beverage container, the plastic bottle, which is the PET container, and the other container that you usually find -- the gallon of milk container--

MR. CONNELLY: Yes?

ASSEMBLYMAN McENROE: Are those two, volume-wise -- let's say percentage-wise-- Does that represent 80% or 90% of the plastic container -- of plastics in the market? Let's put it that way.

MR. CONNELLY: No. Let's see-- What we are dealing with in the waste stream -- as a couple of people have said already-- Plastic is about 7% by weight. Plastic packaging is about 4% by weight. In terms of--

ASSEMBLYMAN McENROE: So, in other words, are we up to 11%, or is it--

MR. CONNELLY: No, no.

ASSEMBLYMAN McENROE: It's just 4% of the 7%?

MR. CONNELLY: Four percent of the municipal waste stream is plastic packaging. Seven percent is total plastic. Now, plastic packaging includes rigid and nonrigid containers--

ASSEMBLYMAN McENROE: Oh, I see.

MR. CONNELLY: --so it is beverage containers for milk and soft drinks and water and whatever, and soap containers. It is nonbeverage plastic packaging. So, all plastic packaging by weight is about 4%. That is a figure from a study done by Franklin Associates for the USEPA in 1986.

In 1989, they looked at volume on the same basis, the same company, and they said that volume plastic was 18%, all

packaging 34%, and plastic packaging 9% by volume. Soft drink and milk-- Well, plastic beverage containers are probably about two-thirds of total rigid plastic packaging, and then beyond rigid packaging you have all the shrink wrap and blister pack and those other kinds.

Now, I can't really get it down to exactly what percentage--

ASSEMBLYMAN McENROE: But, if the Legislature enacted a mandatory recycling bill limiting it to the beverage containers, it would have a substantial impact, then, on the volume of waste being disposed of in New Jersey -- if we remove that from the waste stream?

MR. CONNELLY: Yes, I would say so. Yes. It is probably a little more than half of the plastic packaging.

ASSEMBLYMAN McENROE: Would be in those particular containers?

MR. CONNELLY: Would be in beverage containers, yes.

ASSEMBLYMAN McENROE: Okay. Thank you. Questions, Mr. Shinn?

ASSEMBLYMAN SHINN: I guess the question I always have is: It is fine to do that mandate and require that, but how do we raise the money to pay for it? How do we get those programs implemented, aside from the cost avoidance issue, which I know is--

MR. CONNELLY: Well, I don't think you can do it aside from the cost avoidance issue. I don't think it is right to say, "We'll pay the costs, and you get to keep the revenue." There are programs where people will accept aluminum, glass, and plastic and pay \$12 a ton for it, and then those processors sort the material out, process it in whatever fashion is required, and resell it into the market.

We have looked at the collection costs, and the indication is that the benefit, or cost, is probably not very large one way or the other. I don't think, based on the

information we have, that the incremental cost of adding plastic is a particularly significant cost. There are 233 towns doing it now. They don't have to do it, but they continue to do it. We haven't had any, that I am aware of, which have stopped doing it. So I have to believe that if the costs were significant to the municipalities, given the climate surrounding municipal financing these days, that they would stop, or not do it at all.

ASSEMBLYMAN SHINN: A few have leaned out of some of their recycling programs. It seems to me -- it has been my experience -- that every year we are just under more and more pressure to come up with the dollars, as these markets are fading and becoming, "here today, gone tomorrow" -- and more in the "gone tomorrow" category, quite frankly; that we struggle to get more dollars together to keep programs together. Then when you talk about adding a product, which I am 100% in favor of, how do we, as a Legislature, mandate it, pass it down to the municipalities and counties, without any subsidies whatsoever, and say: "Go do it"? It takes money to start a program, or to add to a program. The minute you do it, you've got to fund it.

MR. CONNELLY: Well, I think there are two issues: One is the market issue. I will just comment that the market for both of the materials used in beverage containers -- polyethylene terephthalate, PET, which is a soft drink high density polyethylene, which is the dairy container-- Water containers, basically, are one or the other. The markets for those materials are very strong. I won't go into--

ASSEMBLYMAN McENROE: Yeah, that is a part of today's hearing, too. We do have people representing the market who will come up and I hope offer testimony to substantiate your position.

MR. CONNELLY: There are people who buy this material and they are here, so I will leave the details of that to

them. But the market for the material is strong, and the market has been growing considerably. In fact, there is basically a shortage of the material now.

In terms of the cost issue, I think the State has a responsibility to develop a comprehensive program to deal with the solid waste issue, particularly as it relates to landfills. And I think decoupling the economics of recycling from the savings generated by not having to go into landfills, is an inappropriate way to deal with it.

ASSEMBLYMAN SHINN: I'm not saying decoupling. I'm talking about the difference. You can subtract that and you end up with the difference, and you just can't ignore the difference, because it is a cost.

MR. CONNELLY: But see, the indications we have in the study we have conducted is that there is, in fact, not a difference.

ASSEMBLYMAN McENROE: I am convinced from the studies that I have observed that there is a consuming interest on the part of the population of our State with recycling, and that they want to be informed about it. They are willing to cooperate. They think the trade-off of municipal costs of supporting the recycling efforts are worthwhile. I think there is something to be said for the aesthetics of involving one's self in recycling, and I do think there is a ground swell of support among most of the people who reach out and try to become informed about the importance of recycling to support the inclusion of plastic, particularly those two containers, in the recycling effort.

I submit that municipal officials recognize that, and the proof, I believe, is in the fact that 233 municipalities of the 567 are including plastics as an appropriate part of their recycling plans. Again, the large question of markets-- We hope to have some comments on that very shortly.

Mr. Connelly, we appreciate your comments. I know you have worked very carefully in this area developing an interest in plastics recycling. That is one specific matter of legislation that I think the Committee will have on its agenda very shortly -- the consideration of including plastics, particularly those items -- those beverage containers -- as part of our recycling -- our mandatory recycling law.

Any further questions, Mr. Shinn?

ASSEMBLYMAN SHINN: You're doing better, but you have a lot more to do. So have we. But, you are coming along.

MR. CONNELLY: Thank you very much.

ASSEMBLYMAN McENROE: Thank you very much for appearing here.

I am just going to ask Peter Yull, Chairman, Mercer County Improvement Authority-- Would you like to comment, Mr. Yull? Come forward, please. Mr. Yull, this is Mr. Shinn of Burlington County, myself, and our Committee. Good afternoon.

P E T E R M. Y U L L: Good afternoon. I am Peter M. Yull, Chairman of the Board of Commissioners of the Mercer County Improvement Authority. We are the solid waste management agency for Mercer County. We began an extensive countywide curbside recycling program last year, and it is nice to note, from DEP's presentation this morning, that Mercer -- the Capital County -- is the number one county in recycling, at 38%, although we are not content with that figure.

I wish first of all to thank Chairman McEnroe and the members of the Committee for the opportunity to address the recycling issue and what I believe is its future in New Jersey. Mercer County currently has a long-term agreement for trash disposal with an out-of-state landfill. The disposal capacity of our contract takes into account the eventual reduction of solid waste through the operation of Mercer's proposed resource recovery facility, to begin operations in

1993. We have plans to develop a backup landfill in-county. All of these projects rely heavily on the success of our recycling program.

The Mercer County Improvement Authority, through its collection contract with National Waste Recycling of Trenton, currently provides curbside collection of recyclables from all 91,000 single-family residences in Mercer County. Collections are performed once every two weeks. Shortly, some 5000 multi-family dwelling units will also begin to recycle, and all 11,000 commercial establishments should be on-line through their own programs or through municipal collections, in the near future.

Our curbside recycling program began last September, and already we have a 60% participation rate from residents, with the rate exceeding 80% in some of the smaller communities in the county. Commingled materials are placed in 20-gallon yellow plastic containers provided by the Mercer County Improvement Authority to every single family household. Newspapers are tied or bagged in paper bags and are set out with the containers.

We currently recycle all glass, metal and aluminum food and beverage containers, PET plastic soda bottles, and HDP milk and water containers. Recyclables are sold to Distributors Recycling, Inc. in Newark, which processes and markets the materials. We receive \$12 per ton, less transportation costs, for the recyclables. Newspapers are recycled locally through the Homasote Corporation. We currently pay \$19 per ton to get rid of the paper, but I understand that this places us in much better stead than some counties, which are paying up to \$30 a ton.

As you know, the State's Mandatory Recycling Act requires counties to institute recycling programs and achieve 15% recycling of municipal solid waste by the end of one year, and 25% at the end of year two and each succeeding year. After

just six months, Mercer County has already recycled over 15,000 tons of material, saving Mercer residents over \$1.5 million in tipping fees.

The Mercer County Improvement Authority feels, however, that in spite of the success of our countywide program, much more could be done. The one thing that seems to be holding us and private recyclers back, is the lack of markets for the recyclable materials which we have been hitting at all morning. It is this dilemma that underscores my primary reason for appearing before you today.

Mercer County, in addition to the previously mentioned commingled municipal recyclables, also recycles white goods, leaves, and tires. In the past year, in fact, we have recycled over 100,000 tires, representing approximately 1000 tons. In spite of this considerable amount of material that we are now providing to existing recycling markets, I am frequently asked why we do not, or cannot recycle detergent bottles or bleach bottles or other types of plastics, or even household batteries?

The common answer is: There is neither no market for those materials, or the markets are so limited that they could not use the volume of materials we could provide. An additional factor is the cost of collecting plastics. Before adding additional markets for plastics in particular, the cost of collection and transportation, as well as market prices, have to be analyzed to see if the additional costs warrant the addition of new plastics to the recycling stream. I am, to a certain extent, just echoing sentiments expressed previously.

But recycling, after all, is driven by economics. We all recognize recycling as an integral part of any effective solid waste management plan, but it is only as effective as the available technology for the reuse of the recyclable materials. I would suggest to this Committee that we can do better, and I would further suggest that the Legislature could

help by examining and supporting existing industry and private sector initiatives to develop the materials market. The Legislature may even further those efforts by providing enhancements of its own, perhaps in the form of incentives to private industry to not only provide for the reuse of its own products and packaging materials, but to establish an open market to private and public recyclers who could provide large amounts of materials from within New Jersey.

Let's not kid ourselves: Suggestions of 100%, 90%, even 75% recycling of our solid waste are not rational or reasonable at this time. Even in Japan, possibly the most technologically advanced nation on earth -- or so they would have us believe -- only 50% of the waste stream is recycled. But we can, and must do better than we have been doing. Recycling has much more of an effect than just the reuse of material. It conserves landfill space. It conserves energy, since much less is required to manufacture products from recyclable materials than from raw materials. It preserves the beauty and safety of our environment, and it is something we can all do to help.

In closing, I cannot stress too strongly the importance of market development. The impact of the paper market alone has already added \$19 per ton to the cost of Mercer's recycling program, and that is to a facility located within our county. But the Mercer County Improvement Authority will not make any specific proposals regarding market development, because any proposals should address a statewide solution, and I have heard from others that it should be a regional solution. There are others with more expertise who have done extensive research into market development. Private sector input must be solicited in order to develop and bind public/private cooperation, and I appreciate the fact that you are soliciting that today.

The Legislature should look for assistance from recognized recycling organizations, such as the New Jersey Recycling Forum. Recycling is working in Mercer County and elsewhere in our State, but its success will continue to be limited without a private/public joint venture in market development.

Thank you.

ASSEMBLYMAN McENROE: Thank you, Mr. Yull. We appreciate your comments and your very comprehensive report, in fact. Do you have any comment, Mr. Shinn? (no response)

We will move now to Mr. James Rouse, Regional Director of Public Affairs, Union Carbide Corporation. (no response) Do we have Mr. Peter Riemschneider, representing the James River Corporation; also New Jersey Coordinator for the Polystyrene Packaging Council? (affirmative response from audience)

P E T E R R I E M S C H N E I D E R: My name is Peter Riemschneider.

ASSEMBLYMAN McENROE: Mr. Riemschneider, how are you?

MR. RIEMSCHEIDER: I am an employee of the James River Corporation, which is primarily a paper company, but in the division of the Dixie Products Group -- the Handicap Division -- which is the maker of foam food service ware, the coffee cups, the food containers. But I am also the New Jersey Coordinator for the Polystyrene Packaging Council, which is, much like some of the other speakers, a trade association that has gotten together to promote the public perception and understanding of the product, including, among other things, the recyclability of the product.

ASSEMBLYMAN McENROE: You manufacture floatables, as we call them in the waste stream. Is that correct? Does your product float on water?

MR. RIEMSCHEIDER: Yes, certainly, I can address that real quick. In some of the programs we have been working on,

this actually aids in recapture when there is an existing recycling program, because you can actually get it back. It does not sink down to the bottom.

I am going to limit my comments because I had anticipated speaking after some of the other speakers from the plastics industry. Polystyrene, and especially polystyrene foam fruit packs -- food servicing packaging -- is a minute component of the solid waste stream. It is one-quarter of 1%, so a lot of the difficulty in promoting the recycling of it is the same, for example, as some of the comments you got from Chuck Connelly. Even though it is recyclable, the complaint is, "Why is it worth it?" You know, with plastics, for example, the volume is greater than the weight. The volume ratio to weight starts you having to factor in the transportation costs of bringing it to processing, and with polystyrene, especially the polystyrene foam food service, that is an even further consideration.

But, despite that, there has been the commitment made on the part of the foam food service industry to recycle 25% of all the foam food service used in this country by 1995. We in New Jersey are lucky enough to be in a unique geographic situation where two of the major processing plants that are either existing or planned will be close enough to us for them to become a good market. One of them is Polystyrene Recycling, Inc. in Brooklyn, a subdivision of Amico Food Products. They are already currently recycling, I believe, close to a million pounds of post-consumer foam food service.

ASSEMBLYMAN McENROE: Mr. Riemschneider, when you mention recycling of your polystyrene products, what do they become?

MR. RIEMSCHNEIDER: Okay. In general, the industry efforts towards recycling the foam food service products is to collect them, process them, which ultimately includes

densifying, and then selling them as pellets. Very much as the glass industry is selling cullet, we would be selling recaptured, reclaimed resin.

Now, that market is strong. A major buyer of that resin is Rubbermaid, down in Winchester, Virginia, and any industry publication you read, somewhere along the line, usually quotes the fact that they are basically begging for anybody that can get post-consumer polystyrene resin, they will buy it. They are already including that in a lot of the products they make. For example, the four million blue recycling containers that the City of New York has ordered from Rubbermaid, have a post-consumer recycled plastic content in them. I believe currently the polystyrene component of that is anywhere from 5% to 10%. They could go, I believe, all the way to 25%, without harming the integrity of that product.

That is also true, for example, for the plastics lumber, which is kind of a generic term for plastic commingled profile products. I think you probably have some people perhaps from the Center for Plastic Recycling Research and other people from that industry and area speaking today. But some very interesting information has come out of that research in the last year or so, which shows that the inclusion of polystyrene at higher rates actually improves the integrity of that product. Now, polystyrene -- I don't know the numbers off the top of my head -- I would guess, is less than 10% of the whole plastics resin stream. And yet when you look at the plastic profiles -- commingled plastic profiles -- that are being made by these processes, you find that including polystyrene up to a 50% composition enhances the product, and optimal strength for stress and strain when you are using these products for construction seems to be 35%. That, to me, indicates that as those products become marketed and developed and included in the marketplace as something that people regularly buy, that demand for the type of resin that actually

enhances the quality of the product is going to drive the prices of recaptured resins higher.

There are other markets for polystyrene even before it turns into resin, and those are in various developmental stages. One example would be the inclusion of recaptured foam without densifying in, for example, vermiculite potting soil. That has been done for as many years as the industry has existed. There is also research being done on artificial lightweight soils that include up to 70% to 90% expanded polystyrene. These are all programs that have been developed by a lot of different people. The Polystyrene Packaging Council, the National Polystyrene Recycling Corporation-- All of these groups are relatively new. We are sort of the "new kid on the block," when it comes to getting into recycling, and a lot of what we are doing is just finding out all the things that are out there and pulling them together.

ASSEMBLYMAN McENROE: But you are submitting that there is a considerable market for your polystyrene recyclables?

MR. RIEMSCHEIDER: Sure. I think probably the most important message that the National Polystyrene Recycling Corporation, which was founded by the eight major resin manufacturers -- and I brought along a list because I don't often remember it-- They include: Amico Chemical, Arco Chemical, Chevron Chemical, Dow Chemical, Phena Oil and Chemical, Huntsman Chemical, Mobil Chemical, and Polysar (phonetic spellings). Last July, they announced their plans for setting up five additional regional processing facilities, with a capacity each of 13 million pounds per year of processing polystyrene. They also announced the proposed siting areas. They include: Los Angeles, San Francisco, Chicago, Portland, and the one that is of most interest to us, the Greater Philadelphia Area.

Now, I can't announce who or where that is at this point, even though I do sit on the sourcing committee for that

plant. The principals involved in owning and operating and siting that plant naturally deserve the chance to make their announcements at the times when they are prepared to do that. But we are working aggressively to convince people to include polystyrene in collection programs, in order to guarantee the 13 million pounds per year that is going to be needed to keep that plant running.

The progress that has been made in this specific product in the 18 months or less that efforts have been directed towards it, I think are very credible. Up in the New England area, where a processing plant exists -- it is about a year or more older -- they have over 135 schools since last month -- 135 schools, 20 corporations, and, as of yesterday, when I spoke to a McDonald's representative, 300 or more McDonald stores, source separating their polystyrene foam and sending it to that plant to be processed.

McDonald's has made a commitment to source separate their polystyrene and send it on to processing, and they have followed through very admirably. In addition to those 300 stores in the New England area, I know there are, I believe, 13 stores in the Long Island area. They are committed to having all 51 stores in the Long Island area source separating.

I speak regularly with the representative of that corporation who is instituting recycling programs for New Jersey, Dorothy Brown. They are committed to including their stores from the New Jersey area as quickly as possible, obviously in anticipation of having a processing plant near enough to be able to bring the materials.

I work with representatives from Amico Foam Company, which is the owner of Polystyrene Recycling, Inc. in Brooklyn. In the past year, they -- and in some cases I have joined them as well -- have made over 35 presentations to either school boards or even school districts, you know, with a large number of superintendents to promote the collection of foam food

service trays when they are used in the schools. Anyone who saw the Time/Warner Earth Day Special, in one of the little segments they had they clearly showed school children source separating their foam food service trays. There were at least six or seven specific mentions to recycling polystyrene. When we interviewed the Santa Monica Director of the Recycling Center in Santa Monica, directly behind him was the large bin that they used in that program for collecting and separating polystyrene plastics, in addition to the other ones.

ASSEMBLYMAN McENROE: And you are submitting that that is a recyclable commodity?

MR. RIEMSCHEIDER: Yes, very much so. As I said, in a way, some of the concerns--

ASSEMBLYMAN McENROE: Do you have any percentages at the present time as to how much of the produced polystyrene is finding itself back into recycling?

MR. RIEMSCHEIDER: That would be kind of tough to do. I regularly track how much styrene is sold. A lot of polystyrene ends up sold as styrene scrap. That is hard to separate into the various forms. The goal is to recapture the 25% of the foam food service by 1995. What the current percentage of everything that is being recaptured is for the number of programs that exist-- That would be hard to say. It is probably, nationally, above 1% and growing by leaps and bounds.

ASSEMBLYMAN McENROE: How long does a polystyrene product last in the open air?

MR. RIEMSCHEIDER: That would depend on who manufactured it. There are studies that show that some of the foam containers are photodegradable. It would actually ultimately depend on the type of process it was made by. Not all polystyrene is made the same way. There is sheet extrusion; there is expanded bead-shaped molding. For example, with the product we make, the beads are coated with a powder

called zinc stearate, which is the same -- which is related to the same stuff used for fillers and vitamins. That powder is going to come apart, so, you know, each different process would be different.

ASSEMBLYMAN McENROE: So you're saying-- Would it be from 30 days to 30 years? I mean, is there that wide a swing?

MR. RIEMSCHEIDER: I wouldn't guess that any plastic would degrade in the environment in 30 days, appreciably, including the ones with the copolymer added. All you are doing is making pieces.

ASSEMBLYMAN McENROE: So there is no real degradable plastic manufactured at this time?

MR. RIEMSCHEIDER: Well, I wouldn't be the expert to speak on that, but I think, in general, the attention to degradable plastics was kind of a direction of efforts that if you look at the idea of biodegradability being -- you know, how vital is it to reducing the filling up of landfill volume, just the fact of the way landfills are constructed increases the chances of even things like food particles and newspapers -- and I am sure you have heard a lot of testimony on that--

ASSEMBLYMAN McENROE: Much of the manufacture of the early plastics emphasized that they were indestructible, and now we are trying to work into the equation an opportunity to make plastics self destruct.

MR. RIEMSCHEIDER: Well, the good news is this, and this is not just true of polystyrene. Polystyrene gets a lot of attention. It is visible. It is an incredibly small component of the waste stream, but it is visible. But a lot of what is true of other plastics, is also true of polystyrene. When it is reclaimed and reprocessed, it can be reprocessed many times over. For example -- and I think some of the other speakers who will follow me will probably show you -- you can collect the foam food containers and cups and the various other forms -- the clear salad shells and all the cutlery and all the

things that are used in food service-- You can collect them, have them reprocessed, and make a durable good, whether it is desk furniture-- I have some desk furniture in my office that is made of 80% recycled post-consumer polystyrene. You can make trays out it, coat hangers, and various things like that.

But the other thing is, once those products are made, when they are disposed of, they can also be ground up and reprocessed again. And ultimately, just as newspaper-- People testified that you can reuse it a certain number of times. Ultimately, depending upon the process, the less degraded the plastic is when it is reprocessed, the more times it can be reclaimed, recycled, and turned into another product.

Then the final end product that I think everybody is looking to for-- You know, once you have made the recycled certain set of resins 10 times, the entire construction profile plastic lumber industry could very well become like an end home for all the plastics that have been recycled, and no longer retain the properties that make them valuable in their individual resin types.

But the key idea is that polystyrene really is no different from all the other plastics that are reclaimable and reprocessible, and the industry has committed to making the reprocessing available. Here in New Jersey it is available relatively close. There is the plant in Brooklyn and a future plant in the Philadelphia area.

ASSEMBLYMAN McENROE: Are you contemplating any new industry in New Jersey?

MR. RIEMSCHEIDER: There are a lot of independents out there. I have spoken to a number of companies that, in part, are waiting to see what happens with the major efforts before they jump in. Prior to the commitment of the NPRC to build and operate processing plants for reclaimed polystyrene, there have been people doing it in the past already. A lot are generally geared toward industrial scrap. It is interesting,

just in my own plant, we have not landfilled any scrap in over four years, and originally we had one or two vendors we could sell it to. Just in this past week I was approached by two other major companies that are interested in buying our scrap -- clean industrial polystyrene scrap. There is no reason for any of it to ever be landfilled, because the market is there. In a way, people are actually starting to fight for it. It is beginning to have that much of a value.

ASSEMBLYMAN McENROE: Thank you very much. Do you have any questions, Mr. Shinn?

ASSEMBLYMAN SHINN: No, thank you.

ASSEMBLYMAN McENROE: We appreciate, Mr. Riemschneider, your coming before our Committee.

MR. RIEMSCHEIDER: Okay. I hope that some of the follow-up testimony by the plastics industry in general-- Just keep in mind that this specific resin fits in with all of those plans. If there were a comprehensive plastic recycling -- reclamation program, including curbside, I would hope that polystyrene would have room in that. I am working with some communities that are seriously looking at adding that to their existing plastics programs.

ASSEMBLYMAN McENROE: Thank you very much. We appreciate your coming before our Committee.

We will now hear from Mr. James Rouse, of Union Carbide. Mr. Rouse, will you join us at the table, please?

J A M E S B. R O U S E: Thank you, Mr. Chairman. I apologize for being out of the room.

ASSEMBLYMAN McENROE: Well, we had you in position to speak before the prior speaker, but go ahead.

MR. ROUSE: I apologize. I thought I was going to be the last of the plastics speakers.

I am James Rouse, Regional Director of Public Affairs for Union Carbide. I come from Danbury, Connecticut. I am

speaking on behalf of our recently inaugurated Recycling Center in Piscataway. I am also here to endorse increased plastics recycling in New Jersey.

Union Carbide supports the four-tier solid waste strategy adopted by the New Jersey DEP pursuant to legislative direction: source reduction, recycling, incineration, and landfill. One very important aspect of this overall strategy which we are talking about here today, is recycling. Traditionally, this has been a public/private partnership requiring the cooperation and participation of residential, commercial, and industrial entities, but frankly, we really need your help to make it work.

Our 40-million-pound-per-year, multiplastics recycling plant to be located in Piscataway will begin operation in 1991. We chose this location, frankly, because of its excellent transportation and its close proximity to our state-of-the-art Polymers Research and Development Center.

Besides processing rigid containers such as milk jugs and soda bottles, this facility will process soap, detergent, and cleaning agent containers, as well as flexible wrap, or what we call "film." Most of the film is from commercial packaging material. We will process the polyethylene and upgrade it, using compounding technology that has made Union Carbide a leader in the field. We will produce resins that can be fabricated back into the same kinds of containers such as liquid bleach, detergent, and other useful plastic materials such as pipe and conduit. Now, to be truly successful, plastics recycling -- with all deference to some of the speakers you are going to hear -- must go beyond the park benches and the sign posts and the flower pots. We foresee applications that mirror those for virgin materials, except for food containers, for which FDA standards necessitate the use of virgin materials.

In effect, Union Carbide has begun and closed the recycling loop. We manufacture the virgin materials, of course, which are used for various products, and those products we hope will be returned, and then we will join, at the end of the loop, in reprocessing those products into recycled resins to be started again in other products.

Initially, we plan to draw, for the Recycling Center, primarily on municipalities, counties, brokers, and businesses in four states: New York, New Jersey, of course -- I should say it first -- Pennsylvania, and Connecticut. However, we are looking longer term to drawing on areas within a 250-mile radius of Piscataway, and eventually a 500-mile radius, the latter being an area that encompasses nearly 40% of the U.S. population.

Mr. Chairman, the barriers facing our recycling project are really human, not technical. We know that plastics, of course, can be recycled. We have the technology, the skills, and, more critically, the end-use markets for recycled products. The big problem is the lack of recyclable material. Until recently, too few communities have been including plastics in their curbside collection programs, but New Jersey is leading the way in the Northeast with nine of 21 counties -- and Mary Sheil, I think, said 207 towns; we count around 230 individual municipalities -- that are including PET HDPE in their curbside programs.

State and local governments have been reluctant to commit to plastics collection and recycling. Until recently, there has been really very little reason to take the risk. Many municipalities are concerned that collection methods are cumbersome and require--

ASSEMBLYMAN McENROE: Excuse me, Mr. Rouse.

MR. ROUSE: Sure.

ASSEMBLYMAN McENROE: I am going to have the Vice Chair, Mr. Jacobson, conduct the hearing for the next few moments.

MR. ROUSE: Thank you. As I was saying, some State and local governments have been reluctant to commit to plastics collection and recycling. There has been really very little reason to take the risk. Many are concerned that collection methods are cumbersome and require reconfigured bins and garbage trucks. Others think there are no end-use markets for recycled products. Well, I can assure you, Mr. Vice Chairman and other members of the Committee, that there are end-use markets.

For example, companies like Proctor & Gamble are specifying a certain percentage of recycled content in their liquid soap and bleach containers. Other customers of ours are starting to inquire about recycled resins: Do we have them? When are we going to get them? How soon can we provide recycled resins of the grade and quality that will be used by molders in their containers?

Now, we are anxious to supply them, but we need the interest and cooperation of all levels of government, as well as individuals to increase source separation and curbside recycling. At the State level, we are hopeful that New Jersey will match our commitment by including plastics recycling in the remaining 12 counties, and eventually in most, if not all of the State's 567 municipalities. For economies of scale, we would prefer to see countywide or regional programs as being the most efficient. As programs are implemented, further economies can be achieved by siting materials recovery facilities near rail sidings to permit optimal shipment to recycling centers such as the one we are planning in Piscataway, where we have a Conrail siding right in the plant.

Union Carbide wants to make plastics recycling work. We have the experience, we have the technology, and now we have the markets, but we need a steady supply of recyclable materials.

To conclude, this really has been a promotion, Mr. Vice Chairman and members of the Committee. First, obviously, is our own planned facility in Piscataway. I think all of you received a copy of the press kit that we distributed in January. Second, we are here to promote the subject of recycling -- plastics recycling in New Jersey, in general. Third, and finally, is the need for local officials to voluntarily institute plastics recycling to ensure that there is more than lip service to plastics recycling. Union Carbide will be part of the growing national partnership of private sector and public interest in working toward solid waste solutions. In effect, that commitment has started here in New Jersey.

Thank you.

ASSEMBLYMAN JACOBSON: Thank you, Mr. Rouse. Any questions from the Committee members?

ASSEMBLYMAN SHINN: This is the question, just a little dichotomy in some of the philosophy you are recommending: You are saying include it as a mandated recycling item, and tell the counties and the towns to recycle plastics. I think the general thrust of the legislation was, let the market drive what is most cost-effective to take out of the waste stream. I guess therein lies the point of contention.

Once we direct it to a private corporation, we take out the cost-building process of what you are going to pay for recycled materials because it is mandated at your doorstep. The problem I have in this whole issue is, if we mandate municipalities and counties to do a specific item, then we sort of downgrade the marketability of that from the manufacturer's standpoint. How do we deal with that issue?

MR. ROUSE: Well, if I had the optimum solution, it would be to go to the other 12 counties and say: "Look at the nine previous examples in the last two years, where they have included plastics in their recycling programs." The impetus

has come from the counties themselves. To say to the other 12 counties, "We really don't want the State to tell you what to include. We really don't want the State to, in effect, pick out an additional product which has not been chosen by your county, but we really feel very strongly, as State legislators, that plastics should be included." What is different now--

ASSEMBLYMAN SHINN: You are not talking market prices, though. See, I am talking market prices. You are talking, "Let's go recycle -- rah, rah, rah." I'm all for that, but let's talk about what kind of market prices are out there and what the range of market prices has been since these 12 counties have been recycling? Where did we start, and where are we now and what does the future hold?

MR. ROUSE: Well, the market-- I can't get into specifics, but I can tell you that the market price right now that we are paying is tied to the price of virgin polyethylene. So the market price for recycled materials, or raw materials, if you will -- the plastic bottles -- will vary according to the market for the virgin material. Not only that, but it will vary according to whether Wellman is out there, or whether Day Products and others are out there trying to enter into agreements. That will drive the price up.

ASSEMBLYMAN SHINN: Yeah, but you are still not telling me anything. You know that Mercer is paying \$19 a ton to get rid of newspapers. You are not--

MR. ROUSE: I can't give you any market guarantees as to what--

ASSEMBLYMAN SHINN: Yeah, but you are not giving me anything. You are not telling me a range, a history, or--

MR. ROUSE: Well, we have--

ASSEMBLYMAN SHINN: I'm sure the Legislature is going to look before they direct a stream to a corporation to see that there is some equity balance. Are we suppressing that

market and suppressing a revenue that is going to come out of that market? Are we encouraging a free market material supply?

MR. ROUSE: I can't give you any assurances, other than looking at what has happened with the aluminum and glass market, where, again, that was not mandated, except it is by far the most common -- aluminum/glass/newspapers -- among the three items that have been mandated; what has been the history there as far as the market price for aluminum and glass. That is probably the only guide we are going to have, Assemblyman Shinn, as far as how the markets are going to react.

I hope -- I don't want to make any forecasts -- we don't get into a situation where the newsprint, a temporary valley, if you will-- The trough in the newsprint price is perhaps disillusioning some people. Right now it is the opposite for plastic, with the demand for recycled resins by the molders and by Proctor & Gamble and others obviously outstripping our supplies. We don't have any ourselves.

ASSEMBLYMAN SHINN: But that ought to set a good price for the recycling.

MR. ROUSE: Yes, it should; initially, it should. I can't tell you exactly what it is. I can tell you that we are entering into agreements with brokers and municipalities, and probably the price right now is a little higher than it might be five or ten years down the road, when recycling is more common. But we are going to find more competitors, ourselves. We are going to have people like DuPont, Dow, Day Products, Wellman, and others out there competing for that product. We are not going to be the only ones. So the market will determine the price, not us alone.

ASSEMBLYMAN SHINN: The market will determine the price if we-- You've got a price of raw material, and you've got a price of recycled material.

MR. ROUSE: That's right.

ASSEMBLYMAN SHINN: Now, depending on what you can use the recycled material for-- If it is the same price as raw material, the raw material is going to drive the recycled material up, unless we give you a free lunch by saying, "We are going to direct everybody to send their plastics to you." How do we keep that at an honest market fluctuation?

MR. ROUSE: You will never direct anybody to send it to us. You are talking about us as an industry, us as a business, not us as Union Carbide. We will, in effect, be out there initially because we are getting pressure from our blow molders and our customers downstream. We will be out there seeking sources which will drive the price up.

Now, as long as the sources, as long as the Proctor & Gambles specify a certain amount of recycled content and we have to get that recycled resin, we are going to be going out there and looking for plastics. The reason why the mandatory issue came up in a bill that is, I guess, still before the Legislature, is that it was the chicken and the egg, going back to what you were saying. Who is going to make the first move? Well, the plastics industry has already made the first move, and we now have results and responses from nine of the counties. So maybe two years from now we will have 21 counties with some form of mandatory inclusion, and we won't need legislation.

ASSEMBLYMAN SHINN: I think the first move was the Mandatory Recycling Act. It sort of drove the plastics industry into action.

MR. ROUSE: Yes. That was the--

ASSEMBLYMAN SHINN: Then the plastics industry sort of responded and is getting geared up to address this market. The next move, to me, is pretty critical. There has to be a good balance in what we do in the next step. I think that is significant--

MR. ROUSE: That's true.

ASSEMBLYMAN SHINN: --to give this Committee some assurance that there is going to be a strong market for plastics and make everyone feel better in moving forward.

MR. ROUSE: I wish I could give you a long-term prognosis, but short term--

ASSEMBLYMAN SHINN: Just short term would be fine.

MR. ROUSE: Short term, the demand right now is there and the quality, or the product is not there.

ASSEMBLYMAN SHINN: Price range is what I--

MR. ROUSE: I can't give you that, because, quite frankly, I am really not sure what the price range is. I can give you the name of a person who is a purchasing manager. She will be glad to discuss it with you in private.

ASSEMBLYMAN JACOBSON: Thank you very much, Mr. Rouse.

Our next witness will be Jon Holt.

J O N A T H A N T. H O L T: Thank you, Assemblyman. My name is Jon Holt. I am with Holt, Ross & Yulish. Our firm represents McDonald's Corporation. I am here to address a couple of the issues that you have raised today. One is markets. What kind of markets are out there for recycled materials? The other is polystyrene recycling, as well as some discussion on source reduction.

On April 18, the President of McDonald's USA announced that the company would be spending \$100 million a year on the purchase of recycled products for the construction and remodeling of McDonald's restaurants throughout the country.

Each year, McDonald's constructs approximately 375 new restaurants and remodels an additional 500 or so. They spend approximately \$40 million a year on this capital construction. Through working with McDonald's and their active involvement in recycling issues, we realize that markets are going to be one of the key things that are going to drive recycling, not only of plastics, but of all materials. They feel, as in the

private sector, rather than just waiting for government to mandate, or for government to say, "We are going to purchase products--" Ed Rensi, the President, said, "We are buying a lot of recycled materials. We know they can work. We know we have a use for them, and we are going to make the commitment and send the message to recyclers, to the business industry, to recycling in government that McDonald's is going to set a goal of spending at least 25% of their capital construction budget each year on these products."

This is a national program. However, in this State and in other states, McDonald's are going through that construction and renovation process. We feel it has been an important boost. It is a needed boost. The response we have gotten from recycling groups and environmental groups has been very good, and McDonald's has already put this into practice. For instance, the playlands that you may see at McDonald's, the soft surface that is used in the playland for the children so when they come off the slides there is a soft surface there for them, is made out of recycled tires. The trays that are being used at McDonald's for in-store service now are being made out of recycled polystyrene, creating a demand for polystyrene in recycled products.

McDonald's is in the process now of setting up an information center at its Oak Brook home office in Illinois. It will be ready this fall, where it can serve as a clearinghouse for recyclers, for government and business leaders, to seek information on what is out there in the market for purchasing of products. It's going to be a clearinghouse, also, for suppliers and manufacturers of products to come to McDonald's, discuss their materials with them, find out what application McDonald's can use it for, or to work with McDonald's in setting up some new product or specifications that may be unknown at this point. We've set up a 1-800 number for manufacturers to call in. Over 1000 manufacturers and

suppliers have already called in and registered with the service. The next step will be for McDonald's to send out an information packet, gain a little more insight into their products, and then start the process of meeting with them, and try to find out how these markets can be developed, and how these products can be brought into the McDonald's system.

One of the reasons that McDonald's has made this commitment also, as Peter Riemschneider had mentioned, there's a pilot recycling program -- in-store recycling program in New England going on, on taking the polystyrene out of the store waste stream, having the customer source separate, and then send that polystyrene to a processing center and have it recycled and remade into useful materials. In New Jersey now, there's a program going on in Newark, and through that program we've gone through the process of developing information and education programs for the customers as they come in, so that we can improve that recycling process. I've brought some examples of the materials that are being used, but now there is going to be two separate containers in the McDonald's. One will have the plastic recycling and it will show actual utensils: the forks, the clear plastic trays that you get salad in are also made out of polystyrene, the cups, and the food containers -- foam containers -- go into one bin, and then all the other trash goes into a separate bin -- paper and food.

And, again, it has been an education process that we started in Newark. And if you think about it, it was the first time someone walked into a kind of a public place or a company, and was confronted with recycling. I know a lot of our children are confronted with it in schools, and in government offices, and many corporations have started recycling programs, but this is the first time out in the public sector, in a restaurant area, that people are seeing recycling. It has been an education process but as we have improved the signage, and as repeat customers keep coming in and are familiar with

recycling, the results have been very heartening and the company has made a commitment. The President has made a commitment to extend this recycling in New Jersey, as well as system-wide to all 8200 stores as soon the facilities come on-line.

Peter had mentioned that the National Polystyrene Recycling Corporation was going to be setting up facilities, and I handed out an ad that they put out talking about that. At the end of this year there will be one in the Philadelphia/Camden area, and as soon as that's on-line, there will be a place for New Jersey restaurants to begin taking their sorted polystyrene. We are doing it in New Jersey, and I'll be honest: The communities where it is being done are those communities that considered bans on polystyrene packaging, foam packaging. We've been able to talk with those communities, and what we've been able to talk to them about is, if you take a foam product such as this that is recyclable and replace it with a paper product that's plastic coated -- the problem with this is that there's no practical way to recycle this, and this has to go to the waste stream where the plastic products can be recycled.

And I think to be consistent with the Governor's interest in getting the State up to 50%, that we would like to see more and more communities encouraging recycling of all plastics and polystyrene rather than banning these products. When you get into a ban, then you have to start looking at exceptions for your hospitals, exceptions for other people, and that's really kind of counter to what we're trying to do in recycling. And so, as far as McDonald's Corporation is concerned, there is a commitment to expand their in-store recycling programs in the State and as soon as this Camden/Philadelphia facility is on-line, I will begin implementing it.

Peter mentioned that Dorothy Brown is working with McDonald's. She had implemented the New England program, and has recently transferred to New Jersey to the Bloomfield office, and will be helping implement the program here in the State of New Jersey.

One of the concerns we are having is that several municipalities are considering bans on polystyrene. We've been trying to do our best to educate, and when we've gotten in to talk to councilmen and mayors, they've agreed that we should give recycling a chance. Some states have faced this as well. In Connecticut, the state legislature is considering-- Legislation is going through one house now where there's a moratorium on bans, in an effort to encourage the recycling of plastics including polystyrene.

This is one avenue that the Chairman had asked that maybe we should talk about some things that Legislature could do. I would hope that they would look at incentives to recycling of plastics and polystyrene, and take a look at what's happening, municipality to municipality. The problem with bans is, if you switch over to paper, you have a product that can't be recycled. It's also a disincentive to those entrepreneurs who are looking at this State to see what products are there to pull out of the waste stream, that they can reprocess economically.

So I would hope that this Committee, and the Solid Waste Task Force that the Governor has put together, would look at putting polystyrene as part of that 50% goal of recycling, and doing something to encourage the recycling of that, and to discourage a kind of this ad hoc ban situation that's taking-- It's been well-intentioned, but it really goes counter to what we're trying to do in recycling. I've asked for a copy of that Connecticut legislation, and I will be happy to share that with the Committee when I receive it. So, the good news is, in addressing the issues of markets, that McDonald's has stepped

forward and is creating a \$100 million a year market, and also is committed to recycling of polystyrene. Thank you.

ASSEMBLYMAN McENROE: Thank you, Mr. Holt. We appreciate your comments, and we just are trying to have our lunch. We're not depending on McDonald's at all today for what we're having. (laughter) We do appreciate your comments, and I appreciate very much a publicly recognized corporation like McDonald's becoming involved in an issue that's such a sensitive area. The more responsibility shown by organizations like McDonald's, I think, it gives us the kind of message that we need, and in New Jersey, we're very sensitive -- more and more so -- to recycling, and to corporations and industries that respond in a positive manner. So, thank you.

ASSEMBLYMAN SHINN: Mr. Chairman, I'd just like to make a comment along the same line.

ASSEMBLYMAN McENROE: Mr. Shinn.

ASSEMBLYMAN SHINN: I think that taking a leadership role in an issue where you have a potential of getting a product banned demonstrates that there's recyclability of that product. That's really what's got to happen in this whole plastics issue. And I just follow the Chairman's comments on complimenting you in taking the initiative, and McDonald's for putting the dollars forth to do it because theirs are the types of products that are going to solve the problem, not just try to beat it to death

MR. HOLT: Well, I just would like to add in closing that I a few weeks ago, I met with the president of McDonald's out at the Oak Brook home office. He was very open about this whole issue. And he said, "Listen, probably the easiest thing for us to get the monkey off our back on this polystyrene issue, would be to switch to paper." But, he said, that's not the right thing to do because you can't recycle it, and we're committed to recycling. I'm struggling with this but I'm committed, and we're going to make it work, and we want to make

it work. We'll do what we have to, to educate the public, but recycling's the way to go."

So, there's a commitment there from the top down to make it work, and as soon as that Philadelphia area facility is up and running, we want to see all the stores in the State get into recycling, in-store as well as just purchasing.

ASSEMBLYMAN McENROE: Well, thank you very much. Further questions?

ASSEMBLYMAN JACOBSON: Quick question.

ASSEMBLYMAN McENROE: Mr. Jacobson.

ASSEMBLYMAN JACOBSON: Would it be cheaper to switch to paper, or to stay with plastic in recycling?

MR. HOLT: It would actually be more expensive, about \$20,000 a year per store because paper packaging is more expensive.

ASSEMBLYMAN JACOBSON: So, it's like the packaging that Burger King uses, for example. They use the paper package.

MR. HOLT: Right, but it's coated and that's the problem with, you know, when you get into biodegradability and the whole issue of can you recycle it and all that stuff. Because of FDA regulations, there has to be some coating on that paper between the food and the packaging. But, the paper is more expensive.

ASSEMBLYMAN JACOBSON: But is that paper-- How biodegradable is that paper?

MR. HOLT: Again, we get into the question of biodegradable and how long it takes, but if it's plastic coated, I guess eventually it would biodegrade. I guess the big question is litter, and how long is it going to be out there, and how long would it biodegrade. I mean, it could be a long time if it's plastic coated. We've dealt with the litter issue also on the community level, and interestingly enough, in some communities we've talked to they're unaware of the money available from the litter tax and the litter program -- the

Clean Communities Program. Whether you have plastic or paper, whatever, on the litter issue, it's still an education process there on what we do as people with non-point source pollution whether it's that or other things we throw away, and we've got to think twice about that as well.

ASSEMBLYMAN McENROE: Thank you, Mr. Holt. We next have Mr. Steve Babinchak, representing St. Jude Polymer. Mr. Babinchak.

UNIDENTIFIED MEMBER OF THE AUDIENCE: Mr. Chairman, he didn't make it; he's not here.

ASSEMBLYMAN McENROE: He's not. Okay. The next individual we have is Margo Lane from Garden State Paper, Elmwood Park. Good afternoon and welcome Ms. Lane, Assemblymen Shinn, and Jacobson).

M A R G O L A N E: Good afternoon. Once again, I am Margo Lane, communications manager of Garden State Paper Company, Elmwood Park, New Jersey. I'm here today to provide testimony on behalf of Clare Mullett, Manager of Procurement Services of my company. Garden State Paper is well-known by recyclers here in New Jersey. In 1961 the world's first commercial newsprint manufactured exclusively from old newspapers was produced at the Garden State Paper Mill in Garfield. Since the original Earth Day in 1970, the Garfield Mill has consumed 4.5 million tons of old newspapers. The Mill consumes 270,000 tons of old newspapers annually or about 750 tons every day. Last year Garden State Paper procured a record 182,000 tons of old newspapers from within New Jersey alone. To put that in perspective, it would take a 172 mile long line of packer trucks, bumper to bumper to hold that amount of material.

New Jersey's recycling achievements have been truly outstanding. DEP Commissioner Yaskin recently told recyclers attending the 1990 New Jersey Recycling Forum Dinner in New Brunswick that the State's communities have achieved a

recycling rate of 24% of the municipal solid waste. According to the New Jersey Office of Recycling, 360,000 tons of old newspapers were recovered through recycling programs during 1988, or over 50% of all newspapers circulated in New Jersey were collected and reprocessed back into new products. While the final data is not yet available, we believe that the 1989 recovery rate will be significantly higher.

Newspaper recycling has undergone major changes in recent times. New Jersey and other Northeastern states passed laws requiring the mandatory source separation of recyclables. Old newspapers because of their volume and ease of collection, were one of the most popular materials for municipal recycling programs. The supply of old newspapers shot up at an unprecedented rate. Although the domestic and export demand for old newspapers in the Northeast United States increased over 17% during 1989, the market was soft most of the year. This was particularly true of newspapers mixed with other grades of wastepaper.

The bumper crop of old newspaper recycling without commensurate growth in the demand market led to new legislative initiatives aimed at stimulating demand. California, Connecticut, and most recently Maryland, passed legislation requiring the use of newsprint paper containing recycled fibers. We also saw the newspaper publishing industry make a serious commitment to the use of recycled newsprint. Publishing companies, such as Knight-Ridder, Gannett, Times Mirror, Scripps Howard, and Dow Jones, as well as many of the smaller companies, pledged to use significant amounts of recycled newsprint as quickly as it could be made available.

Virgin fiber newsprint paper manufacturers received a clear message to prepare themselves to make newsprint paper with recycled fiber content. Virtually every newsprint manufacturer in North America investigated how it might

incorporate secondary fiber in its newsprint sheet. In addition to the new world-class recycled newsprint machine started last fall at Southeast Paper Manufacturing in Dublin, Georgia, Atlantic Packaging is scheduled to bring another new machine on line later this year in Whitby, Ontario, which will use 100% recycled fiber for its furnish. A number of new deinking facilities have been announced and are under various stages of permitting and construction. North American newsprint producers which have announced such projects include Canadian Pacific Forest Products, Abitibi Price, Daishowa Paper, Donohue, Norpac, Newstech and Bowater. Each of these are major projects which will place substantial incremental demands on the U.S. ONP -- that's old newspaper -- supply market. These changes are in motion and need a chance to develop without additional stimulation which could cause apprehension about the supply market's ability to support additional growth. The supply market must demonstrate that it can, in fact, reliably feed this substantially larger demand.

I would also like to comment on the current market for old newspapers in New Jersey. Contrary to what you may have heard, there is a market for old newspapers. Garden State Paper is willing to enter into long-term purchase agreements with New Jersey municipalities for loose newspapers which have not been commingled with other grades of wastepaper.

The Garden State Paper Company deinking technology is the most advanced technology available for handling the variety of newspaper printing processes in use today. Our process deinks all of them well, including flexography. We have also made major improvements in the system's ability to remove contaminants found in municipally sourced old newspapers. The company's technical staff is continually working to keep Garfield on the leading edge of the quality issue. In fact, Garden State Paper spent \$25 million for process improvements

during the past few years. We feel that investment is paying off in terms of marketplace acceptance of our finished product. However, product quality is an ongoing endeavor, and we cannot afford to give up the process related gains through relaxed raw material standards. Garden State Paper continues to encourage the development of clean newspapers only -- source separated programs.

In the future, it can be anticipated that other newsprint manufacturers will also be purchasers of clean New Jersey generated old newspaper as their deink pulp lines become reality.

In summary, the North American newsprint producing industry is clearly committed to increasing the use of wastepaper in its products. Further initiatives at this point in time to stimulate demand could be counter productive. There is a good market for old newspapers in New Jersey today. Garden State Paper is willing to sign long-term agreements for clean old newspapers.

Municipalities that place emphasis on the high quality of the old newspapers they collect from residents are the ones who will be successful in effectively marketing their product to old newspaper consumers such as Garden State Paper. Thank you.

ASSEMBLYMAN McENROE: Thank you very much. I have a question for you, and I guess it relates to Garden State. I see you've spent \$25 million in improving your facility in Garfield. Do you contemplate the construction of any additional mills in New Jersey to deal with recycled newspapers?

MS. LANE: We have an expansion study underway at present and we are considering an expansion. However, with the amounts of newsprint coming into the marketplace by the producers who have already announced projects -- not all of them being recycled sheets of course -- but there is already an oversupply of newsprint paper in the marketplace for sale to

publishers. With that kind of an economy, at this point it is difficult to substantiate the expense of a \$500 million newsprint mill with all of this expansion planning.

ASSEMBLYMAN McENROE: So there is an oversupply of newsprint available to the publishers?

MS. LANE: Yes, there is, and there are very low prices being paid for the fact that there is more newsprint available, than there is consumption.

ASSEMBLYMAN McENROE: Because we so often hear that most of the old newspapers find their way to mills in either Canada, or in this case, Georgia, and it would seem with our well located market and such an obvious amount of old newspapers in this metropolitan region of New York, New Jersey, Connecticut and so forth, this would be an ideal marketplace for that. But I guess your firm, Garden State, is accepting the major portion of the local old newspaper market?

MS. LANE: We buy 182,000 tons from New Jersey alone. That's more than half of our supply line, this New Jersey sourced paper. And I'd add that there are other newsprint companies who are investigating building here in the Northeast. They are going through the same economic equations that we are. They have to find an end use for the product they make, even though there might be proposals or more purchasing of recycled newsprint. Still, in the Northeast 81% of the newsprint consumed by publishers in the Northeast is imported from Canada, and it is virgin newsprint paper. So that is the market that we have to sell our finished product to.

ASSEMBLYMAN McENROE: Do you care to comment on the report provided earlier in the hearing by the Publishers Task Force? Do you think all the goals that they announced are reasonable, fair, and reachable?

MS. LANE: Most of the goals, I believe, the publishers will make every effort to reach on a voluntary basis.

ASSEMBLYMAN McENROE: You're not recommending any legislation at the present time?

MS. LANE: No, we do not support a recommendation for legislation.

ASSEMBLYMAN McENROE: Mr. Shinn, do you have any questions, or Mr. Jacobson?

ASSEMBLYMAN SHINN: You made a couple of comments that struck me. Are you accepting baled paper or just loose paper?

MS. LANE: We accept loose paper. We bale it in several of our own facilities for our own consumption.

ASSEMBLYMAN SHINN: And, you're currently willing to enter into contracts with suppliers who are-- Do you pay them for the newspapers or--

MS. LANE: We pay for the newspaper that we buy because our quality standards are very high. We want newspapers only.

ASSEMBLYMAN SHINN: Okay. So, you still are willing to contract for additional quantities of newsprint with potential suppliers.

MS. LANE: We will contract specifically with New Jersey municipalities. That is where we are looking to do our business.

ASSEMBLYMAN SHINN: I assume -- and counties.

MS. LANE: Certainly. Yes, certainly so. But once again, our quality standards are that there be nothing else commingled with that paper. We do not want telephone books, and we don't want to have to separate it out.

ASSEMBLYMAN SHINN: You want pure newspaper; you don't want corrugated or whatever.

MS. LANE: Right.

ASSEMBLYMAN McENROE: Thank you very much.

MS. LANE: Thank you.

ASSEMBLYMAN McENROE: We appreciate your comments, and your testimony is going to be now part of the record. Thank

you. We next have Dr. Darrell Marrow representing the Center for Plastic Recycling Research. We're moving around a bit from plastics to newspapers and back again, but it's a matter of everyone respecting each of them as they have signed in trying to stay in some type of order. All right, you are Dr. Marrow?

DR. D A R R E L L R. M A R R O W: Darrell R. Marrow. Yes.

DR. MARROW: Mr. Chairman and members of the Committee, I appreciate the opportunity to come before you to talk under a title that I've developed called "The Recycling of Post Consumer Plastics: What Role is There for the Government, both State and Local, and What Role is There for the Public? I have some materials that I will leave with the Chairman, and additional copies can be provided upon request.

The Rutgers University Center for Plastics Recycling Research has been working with the public, government, and industry for the past five years in demonstrating the recyclability of post consumer plastics; while helping to develop and commercialize recycling technology. For example, on several occasions, earlier speakers mentioned a company called Day Products. Day Products is a 40 million pound per year plastics recycling and reclaiming operation in Southern New Jersey that opened its doors last October. Its manufacturing technology is based on technology developed at the Center.

As many of you perhaps already know, the Center is one of the New Jersey Commission on Science and Advanced Technology Centers, and one of the charges we have in exchange for the funds we receive -- taxpayers' funds, really -- through the Commission, is to help develop industry in the State. Last week, it was announced that a company will be opening at least one plant, and perhaps two plants in New Jersey to process mixed plastics into products, and the statement earlier made about the issue of how many fence posts, benches, and so forth,

can be made-- The marine environment is going to be a major area in which mixed plastics can play a major role as far as having a positive economic and environmental impact.

We're working very closely with the Port of New York and New Jersey Authority in examining ways in which an interesting development can be addressed. The Hudson River, of course, is in the process of being cleaned up and as a result of that, marine life activity has been rising sharply. The spin-off effect of that result is that now wooden structures that are a major part of the infrastructure within the Hudson River are deteriorating much more rapidly than they did when the river was polluted. Don't take that comment as to suggest that we repollute the river to extend the lifetime of those products, but rather to look at ways in which we can utilize alternative materials. And we're talking about, literally, hundreds of millions of pounds of materials can be utilized in these particular types of applications.

Some of the materials that I will be providing to the Committee include such things as a special issue of a publication called "Plastics World" that came out on the 22nd of April and it has the subtitle: "A Comprehensive Look at Plastics and Recycling." I realize that you have many things to read, but there are a number of areas within this magazine that I think you will find quite worthwhile, interesting, and informative with regard to the recyclability in recycling plastics.

There's also a document called "Vision to Reality" which identifies some of the ways in which plastics can be recycled and the infrastructure from multimaterials can be developed, including plastics. One specific example that I can give you is, last May the Center released a "How To" manual as a technology transfer device identifying ways in which plastics can be included in multimaterial curbside recycling programs.

The largest single waste hauler in the country, Waste Management, has indicated that they feel this is the definitive study in this area. And one of the issues -- and it's unfortunate Assemblyman Shinn had to step out -- but the issue of, is it cost-effective to include plastics in the recycle stream-- Our studies back at that time when we released the document said very clearly, they do. The gentlemen from Mercer County indicated that they've got a 60% participation rate. Our studies have indicated that anything over 60% will cause a cost benefit to be realized by any municipality or locality that decides to recycle materials including plastics. So that's an important aspect to deal with.

There's also information on this, the collection model that we have in the document. We're currently running a Model Cities collection program in Highland Park, New Jersey, where it is implemented in detail, this particular curbside collection model. And with that, we are developing additional information to refine that model. But again, our preliminary results indicate that it is an issue of: Can we afford to collect plastics or include plastics in the recycle stream? It's hard to think we cannot afford not to include them in that material.

In closing what I'd like to -- because there are many other things I could cover, but obviously it's going to be a long day. It already has been, and I don't want to belabor the point. But now that the recyclability and the commercial liability of recycling of plastics has been demonstrated, there are a number of questions that have been raised regarding how more post consumer plastics can be recycled? How can we increase the amount of material and the scope of materials?

For example:

- 1) What are the institutional impediments, if any, to increasing the amount of plastics and the types of plastics that can be recycled in New Jersey?

2) Are there any specific administrative or legislative measures that should be undertaken or enacted to facilitate the growth of plastics recycling in the State of New Jersey?

To backtrack for just a moment to give you a specific example of why we need to increase this, if we could, through Chip Connelly's organization's effort, collect every soft drink bottle in the State of New Jersey, we'd be able to collect approximately 25 million pounds of material. Day Products, a single company based in New Jersey, needs 40 million pounds per year, and would like to expand that eventually to 100 million pounds, so obviously, we do need more plastics within New Jersey and other parts of the country, and different types of plastics.

I'll very briefly then identify what I would like to refer to as impediments and remedies, stressing the remedy side of it; letting the interpretation of the impediment that this remedy addresses speak for itself:

1) There should be the establishment of methods and means to educate the public, legislators, and administrators at all levels, particularly at the highest levels of leadership in the State, that plastics banning and bashing -- since it often is based on misinformation -- and nearly always is counterproductive to the public, and wasteful with respect to energy and resource conservation. The public schools and the New Jersey Department of Environmental Protection are specific agencies that could, and should, play a major role in this area of consumer and legislator education. Our State leaders need to recognize the critical importance of leading the way to more and better plastics recycling.

2) Have the State take a leadership role, financially as well as organizationally, in building the statewide infrastructure necessary for the recycling of up to 50% to 60% of our waste stream that I feel can, and should, be recycled

ultimately -- with plastics being included in that mixture. The State of Rhode Island model is a good one to consider in terms of the approach that that State is taking to a statewide multimaterial recycling program.

3) With regards to enhanced plastics recycling, the State of New Jersey already has a mechanism in place with a proven track record to rapidly advance the technology of recycling leading with the Center for Plastics Recycling Research. More State funds devoted to the research and development efforts of the CPRR will generate an even bigger return on investment of taxpayers' dollars than has already been realized.

Two recommendations, and then I'll close my remarks:

1) Begin treating the issue as one of resource conservation and management. By doing so, a much broader and more effective program will result, in which solid State management has solved, as a natural result of succeeding in using recycling as a means to conserve our resources and manage our environment.

2) Give careful consideration to, and back the concept as proposed by such progressive companies as Proctor & Gamble and the Coca Cola Company, that the funds for the research and development and for building the recycling infrastructure, should be generated through a resource utilization surcharge. Such an approach should be taken at the Federal level with encouragement and support coming from local and State agencies.

Thank you.

ASSEMBLYMAN McENROE: Thank you very much. Doctor, some of your comments relate to the need for more public involvement in the recycling and development programs for the State. Do you think that's a duplication of what industry -- the private sector -- can do insofar as research and recommendation?

DR. MARROW: No, I don't think it's a duplication. I think they would be complementary, and I'm addressing to a certain extent the issue of some of the funds that can be generated from a cost avoidance and diversion of very wasteful and expensive materials handling of our waste by solid waste management into recycling. The resource utilization surcharge would, again, be tapping the pockets of industry, and -- let's be realistic, the pockets of the taxpayer -- to help us build this infrastructure that is needed, because once it's in place, it will be a cost benefit and will be something we need to do in a very rapid manner.

ASSEMBLYMAN McEnroe: We come in the budget of the State around \$11 million to \$12 million for recycling. Does your Institute benefit from that budget?

DR. MARROW: Yes. Our total budget for the Research Center for Plastics Recycling Research is for this year \$3.7 million, and \$600,000 of that came from the State of New Jersey.

ASSEMBLYMAN McENROE: Through the recycling tax, probably?

DR. MARROW: It's through the New Jersey Commission On Science and Technology. I will put that in perspective, however. The State of Rhode Island, with one seventh the population, is expending \$30 million in recycling.

ASSEMBLYMAN McENROE: I don't have that figure, but I appreciate it. Thank you. I guess there weren't any other questions, so we do appreciate you coming before us. I hope the reports that you referred to-- If they're not available, I hope the staff will make them available to the members of the Committee because you have brought--

DR. MARROW: As I say I could make additional copies, but I have one complete set.

ASSEMBLYMAN McENROE: If you could. It would be well if you could give them to Mr. Matioska or Mr. Colner of our staff so that we do have your comments. Thank you. We also

have an individual representing aluminum recycling, Alcoa Aluminum. Duane Royal. Is Mr. Royal here?

D U A N E R O Y A L: Yes.

ASSEMBLYMAN McENROE: Would you join us please? Mr. Royal, you represent Alcoa?

MR. ROYAL: Yes, that's right. First of all, I'd like to say, good afternoon. On behalf of the Alcoa Recycling Company I'd like to thank you for the opportunity to speak before you and your Committee. Again, my name is Duane Royal. I am the area Sales and Marketing Manager for Alcoa Recycling Company. We are located in Edison, New Jersey. We, of Alcoa, believe that the aluminum used beverage containers and food containers are one shining example of keeping recyclable material out of the solid waste stream. The aluminum market has been, and continues to be, a very stable market.

Now I'd like to address four questions that were sent to us via correspondence on April 12, 1990 from your office:

1) The first question was, "What percentage of aluminum cans in the municipal solid waste stream is currently recycled in New Jersey, both statewide and on a county basis?"

According to the numbers reported to the New Jersey State Office of Recycling, the aluminum can recycling rate for New Jersey in 1988 was 41.34%. The 1989 figures are not yet available because the tonnage reports are not due in until July of this year. We do not know the recycling figures for counties or municipalities in the State of New Jersey.

2) The second question was, "What percentage of the State's overall aluminum can recycling effort is being undertaken by Alcoa Recycling?"

When compared to the 1988 New Jersey State Office of Recycling numbers, Alcoa Recycling Company recycled over 50% of the aluminum cans recycled. Now, based on the New Jersey Office of Recycling's 1988 figures for available used beverage

cans, we estimate that approximately 20% of the total available used beverage containers in New Jersey were recycled.

3) The third question was, "What are the institutional impediments, if any, to increasing the amount of aluminum that may be recycled in this State?"

Basically, the only impediments that we have, would be commingled material. With aluminum cans having been separated out before arriving in Edison, the can, if contaminated with dirt, plastic, glass, or paper, inhibit our ability to process at a normal pace on any given day. It produces a lesser quality material, and risks either rejection of the load at our facility, or at the mill, with appropriate charge backs or decrease in price to the customer to follow.

4) The fourth and last question was, "Are there any specific administrative or legislative measures that may be undertaken or enacted to facilitate the growth of aluminum recycling in New Jersey?"

The only measure that we really would like to see would be the enactment of measures which would require recyclables to be source separated or segregated at curbside. That would provide a better quality product, higher revenue for municipalities and counties, and the ability to be serviced by more end markets in New Jersey. There are far fewer recyclers in New Jersey who have the ability to handle commingled material in the sorting process. Although there may be additional costs involved in the pick up of separated materials, the higher value paid for UBC and facilities such as Alcoa Recycling, can offset, and in most cases, still provide a profit back to the customer. Our marketing staff can work and help set up programs on request.

There's one thing I would just like for you to be aware -- that we can work within the parameters of a commingled environment. But as stated earlier, there are few sorters of commingled material in New Jersey, and at a facility such as

Edison, we see a decrease in quality from commingled accounts which may translate into fewer dollars, depending on how well the hauler or sorter of the commingled material did his job. Again, thank you.

ASSEMBLYMAN McENROE: Thank you. Mr. Royal, I have a question for you. In your comments, I believe that you mentioned that 20% of the aluminum beverage containers in New Jersey's waste stream are recycled?

MR. ROYAL: Twenty per cent of the available -- based on the New Jersey State Office of Recycling 1988 figures, of the available UBCs, the total available UBC is 20%. Approximately 20% are recycled in New Jersey by Alcoa Recycling Company.

ASSEMBLYMAN McENROE: By Alcoa.

MR. ROYAL: Yes.

ASSEMBLYMAN McENROE: So that's just by your particular firm.

MR. ROYAL: By our company.

ASSEMBLYMAN McENROE: Do you have an estimate of the amount of the percentage of containers that are recycled in New Jersey by all organizations?

MR. ROYAL: That was 41.34%.

ASSEMBLYMAN McENROE: However, there is another large amount -- 59% of the containers are still not being recycled.

MR. ROYAL: That's right.

ASSEMBLYMAN McENROE: That's a large amount of potential there. What is the industry doing to correct that? I'm not leading you into a beverage container deposit legislation debate, but do you have recommendations that would help us aggressively recycle more than we do?

MR. ROYAL: We worked on more programs as far as public awareness programs. We're doing a lot of volunteer programs such as, "Aluminum Cans for Burned Children," all

kinds-- Basically, we're working as far as hitting the angle of public awareness.

ASSEMBLYMAN McENROE: Well, I think your organization does take a responsible role insofar as providing information and education for the public, but in an enlightened State like New Jersey it does seem that we are really not impacting on the market to the level that we should if we're only recapturing four out of every 10 containers.

MR. ROYAL: Okay. First of all, these figures were 1988 figures. I understand that in 1989 the figures are looking to be closer to the 50%. So, it's creeping up; things take time, even though we are an enlightened State, things do take time as far as recycling is concerned. We're at 41.34% in 1988, but I'm sure we're going to be probably up to 50% or over in 1989. So, it is happening, but it is taking time.

ASSEMBLYMAN McENROE: Sure, thank you, and if there is a message in this hearing it's that the Legislature and these type Committees are prepared to assist the private market in reaching certain goals that we see as necessary goals in New Jersey. So we would hope that the kind of effort you've made and the kind of success you've had would only be the beginning and, hopefully, we'll see a much higher level of recycling. We're hearing good things and cooperation from the old newspaper compartment in the market. We certainly look to aluminum cans, with the glass bottles, as the area of the most success, and yet when we measure it, it just does not seem to be as dramatic as one might think. We appreciate, though, very much your coming before us with your testimony. Thank you.

We have listed the Institute for Resource Recovery. Is there a representative? Oh, Matthew Root, representing the Institute for Resource Recovery. Mr. Root, how are you?

M A T T H E W R O O T: Very well, thanks. Good afternoon, and thank you for the chance to deliver a few words on recycling.

ASSEMBLYMAN McENROE: We're interested really in seeing what the Resource Recovery Institute's comments are on the recycling area. This is a very trendy topic in New Jersey recently. So the floor is yours.

MR. ROOT: I'm here today on behalf of Ogden Martin Systems, and to let you know that Ogden Martin is a member of the Institute of Resource Recovery. The IRR is comprised of firms that design, build, and operate facilities to recover energy and materials from trash while stabilizing it and reducing its volume through controlled combustion. The IRR is a component of the National Solid Waste Management Association, a trade group with over 2500 members of the private waste services industry.

Five companies of the IRR do business in New Jersey at twelve facilities that are in various stages of development. The combined waste capacity of these twelve facilities, once completed, will be over 16,000 tons per day which represents approximately 50% of New Jersey's waste stream. The IRR believes an integrated approach is necessary for optimal solid waste management. This integrated approach gives priority to treating as a valuable resource those materials that would be disposed by less useful means. Integrated solid waste management allows localities to select the technologies that would best handle their waste disposal problems, and that could include waste reduction, recycling, combustion, resource recovery, and landfilling.

The IRR recognizes the importance of recycling as one of the highest priorities of integrated waste management. It is a valuable means of recovering continuing use and value from materials, and of reducing the volume of waste that eventually requires disposal. New Jersey's mandatory source separation legislation enacted in '87 which set up a statewide goal of 25% of the waste stream, should help New Jersey recover substantial value from waste materials for their highest and best reuse.

Although currently the State recycles approximately 20% of its waste stream, increased efforts in planning and marketing development should enable the State to achieve and perhaps even surpass its goals.

Recycling can benefit the operation of waste-to-energy facilities in a well-planned integrated waste management system. Recycling encourages the removal of certain items from the waste stream which improves waste combustion, glass, aluminum, metals, batteries, and yard waste, for example; items that either do not contribute to efficient combustion in modern waste-to-energy facilities or can add to the burden of pollutants that must be removed by state-of-the-art pollution controls. Removing these items for recycling can increase the heat value of fuel by up to 25% while reducing ash content by weight, by about 50% in carbon monoxide and hydrocarbon emissions significantly. Removal of automotive batteries reduces the heavy metals content of lead, cadmium, mercury in the air and ash emissions. Yard waste removal could also decrease nitrogen oxide levels in air emissions.

Conversely, the recovery of energy can complement recycling in recovering full value from our waste materials. For economic or technical reasons, some waste that either cannot be recycled or cannot be recycled indefinitely, do hold substantial values in energy source. Other materials like soiled newsprint, or newsprint itself, which also can't be reused indefinitely, do have significant value as sources of energy.

IRR firms themselves are actively engaged in many recycling programs. In fact, in New Jersey permits for resource recovery have not been issued without recycling plans playing an important role. Such plans include an agreement with material separation facilities, curbside collection recycling programs, post combustion materials recovery, and ash reuse applications.

Curbside programs result in excellent recovery of high quality recyclables. These programs teach consumers to both reuse and reduce the waste they generate. Their individual cooperation is essential. In Gloucester County, the waste-to-energy facility will complement the county's aggressive curbside program.

The materials recovery facility, working in conjunction with any county and its resource recovery facility, enables the volume of the waste to be significantly reduced, in combination with the recovery of several valuable resources. This will be evidenced in Monmouth County where a recently awarded project includes a material separation facility to be constructed on the site of the waste energy facility.

The IRR also recovers ferrous metals from their residue. Last year, Ogden Martin alone, recovered 54,000 tons of scrap ferrous in its various plants around the country. This is a fairly simple process as the recovery rate for post combustion ferrous metals is approximately 70% to 90%. Shredding this material results in a high quality metal which sells at the approximate rate of \$60 per ton in New Jersey.

State-of-the-art technology currently employed by IRR members renders the ash resulting from the waste energy facilities into a basically inert substance that closely resembles a low strength concrete when it sets up in a landfill. This residual ash has been increasingly investigated for use in applications such as roadbed fill, aggregate for asphalt, and cement and artificial reef construction.

In summary, IRR and Ogden support integrated solid waste management which allows local government, to select the best waste management options to fit their needs and could include waste reduction, recycling, resource recovery, and landfilling. The rapidly growing garbage problem in New Jersey must be dealt, with and we believes this includes a need to emphasize recycling. It has been our experience that

waste-to-energy has been an effective partner with recycling, and we seek to strengthen this partnership in all of our efforts to solve New Jersey's solid waste problems. Thank you very much.

ASSEMBLYMAN McENROE: Thank you, Mr. Root. I appreciate that. I have a specific question regarding plastics: What's the reaction of the Institute of Resource Recovery to mandatory recycling of plastics? Do you need a substantial amount of plastics in the waste stream to have your facilities function as they should?

MR. ROOT: I feel there's probably enough garbage for everyone to go around, and if plastics were pulled out of the waste stream there should be more than enough garbage left for trash for us. I can certainly try to get you some more data on plastics as a constituent of the waste -- you've heard a lot about it -- but it burns and we can burn it effectively as well, because it's a petroleum-based product.

ASSEMBLYMAN McENROE: Is it correct that there's -- is there a reduction in the BTU quantity of a resource recovery facility?

MR. ROOT: Most of the studies that have been done on recycling programs show that because a lot of what you pull out -- the metals and glass and other things, are heat absorbers and other components which you pull out have high BTU content, newspapers, plastics, that type of thing -- net, it's about the same BTU content after recycling. We find it tends to help burn it -- a cleaner burn.

ASSEMBLYMAN McENROE: Some of your other facilities around the nation, are they located in states where recycling is an aggressive part of people's daily activities?

MR. ROOT: Yes. In fact, a couple of years ago, Marion County, Oregon, where we operate a facility, had the highest countywide rate in the country. I don't know if they still do; I tend to think they may not, but it is in the

Northwest, and there are great economic incentives to recycle there. The facility has been operating superbly. In fact, that was the first one in the country with a scrubber bag house on it.

ASSEMBLYMAN McENROE: So you're presenting a view that recycling and resource recovery are totally compatible as strategies in today's society?

MR. ROOT: Absolutely. And vital components-- Not everyone necessarily needs a waste-to-energy facility, but just because you recycle doesn't mean that it precludes one. They work very well together.

ASSEMBLYMAN McENROE: Is there any difficulty presented to a resource recovery facility by the burning of plastics, or by the plastic with the heavy metal content, the dyes and so forth?

MR. ROOT: Clearly to the extent that the materials coming in could be cleaned up and hazardous elements removed, it improves emissions in ash. But, we can still control it with-- We don't generate metals in our facilities, but we can capture them.

ASSEMBLYMAN McENROE: I frankly am impressed by the statistic of the amount of metal that your facilities recover from the waste stream and sell at apparently a substantial profit.

MR. ROOT: Yes, we generally will share those revenues with the communities where we're involved.

ASSEMBLYMAN McENROE: Thank you. Any questions Mr. Jacobson? (negative response)

MR. ROOT: Thank you very much.

ASSEMBLYMAN McENROE: I appreciate you coming before us, Mr. Root. We now have Caroline Rennie, from Polysource Mid-Atlantic Corporation. Would you join us please?

C A R O L I N E R E N N I E: Thank you very much. My name is Caroline Rennie. I represent Polymer Resource Group. We're

a plastics recycling firm based in Baltimore, Maryland. We take all mixed bottles-- Our long-termed goal is to take the entire plastics packaging post consumer waste stream and recycle that. We've been told a great deal that the big problem in plastics recycling is markets, and what we need to do is to develop markets. It was in response to cries from markets that we came and decided to settle on Maryland where there was mandatory recycling.

When we arrived, we had the technology, we had the engineers, we had the staff, we had the capital; what we didn't have, but thought we could get, was the feedstock. We were wrong. It is extremely difficult to get the feedstock from curbside collection programs if plastics are not mandated for collection. There's strong resistance. There's a lack of public awareness that the plastics can be recycled. And there's no legislative incentive for plastics to be recycled.

Generally the mandate -- and this is certainly true for Maryland -- is for recycling by weight and source reduction -- recycling reduction by weight. Plastics do not account for a significant enough percentage of the weight, by weight, to reduce the waste stream in the same proportion that they can help, if you decide to take into account the volume that they take up. The conservative estimates of the volume that the plastics make up of the waste stream right now is 18%. Other people have made it closer to 25%.

Clearly it would be extremely helpful to take these out of the landfills, since the landfills fill up not by weight but by volume. But whether that is important now, almost doesn't matter. In 1960 there were almost no plastics in the waste stream whatsoever. By 1970 we had 3 million tons, by 1980 we had 7 million tons. This year we're throwing away 12 million tons, and we expect this to double in the next 10 years, to 20 million tons. Clearly, if we set in place the infrastructure now to recycle the plastics, we can avoid a tremendous problem later.

Firms like ours are finding that we're having to compete for the materials that we do want, with a lot of the other firms who you'll find are testifying here today. There's really no likelihood that there's going to be a plastics glut, the way that we see a newspaper glut, because the capital investment that you have to make in order to recycle plastics is on the order of \$10 million. The capital investment that you have to make to recycle newspapers is something on the order of \$200 million to \$500 million. Clearly, if you create a supply of plastics, the demand for that plastic can be created very quickly. We can, within six months to a year, set up a full-scale plant to recycle plastics, and we can, within four months, do what we've now done in Maryland, which is set up a prototype recycling plant -- very small-scale and unfortunately unprofitable -- in order to prove to the municipalities locally, that we can take their plastics and we can recycle them, and then we can continue to do that as they grow. So we have set up a modular technology that will take all the post consumer plastics generated by households and recycle them. Thank you.

ASSEMBLYMAN McENROE: How large is your plant in Maryland?

MS. RENNIE: Right now we're running a line that can do about 400 pounds an hour, and we can go as many shifts as we need to go. In the long term, we'd be looking anywhere between 20 and 40 million pounds a year.

ASSEMBLYMAN McENROE: Is that a \$10 million a year investment?

MS. RENNIE: Yes. I mean we would size it depending upon the curbside programs as they come on-line. Unfortunately, we've found that we've been investing an entire year now, and the plastics are just starting to come out. And so, we really support any legislative incentive that you can

create to make plastics recycling work, because unless the plastics are aggregated, we don't have the feedstock to use.

ASSEMBLYMAN McENROE: That is one of the concerns that this Committee has and one of the directions we want to pay very much attention to. How many employees do you employ in Maryland?

MS. RENNIE: Well, right now we're looking at six. We hope again to be expanding. Within the next year-and-a-half we'll bring a full scale plant on-line and in the end we hope to be employing about 30.

ASSEMBLYMAN McENROE: And you are a competitor of Union Carbide, Allied Signal, all the major manufacturers.

MS. RENNIE: Well, that's right. Yes, and essentially what's happening in the legislative climate nowadays is that plastics recycling is favored for the firms that can absorb this tremendous investment -- the investment of working very closely with all the municipalities to make recycling work -- and works against firms like ours which are small, and independent, and local. We try to sell ourselves as economic development locally.

ASSEMBLYMAN McENROE: Thank you very much. Any questions? (no response) Well, I appreciate your testimony; it helps us very much. Thank you.

MS. RENNIE: Thank you.

ASSEMBLYMAN McENROE: We have Terry Williams from Day Products. Mr. Williams? Good afternoon.

T E R R Y W I L L I A M S: Good afternoon. I'm here today without a prepared text or speech. I'm here just to really give you an overview of what and where Day Products has come from, and where we intend to go, and to tell you a little bit of our perception with plastics recycling in the State of New Jersey.

I'd like first of all to take you back a few years. Day Products was created by an engineering and construction

company called Day and Zimmerman located in Philadelphia, Pennsylvania. Day and Zimmerman is a national and international company that employs about 13 million professionals (sic) across the U.S. and world. Three years ago we looked at a way to reinvest our engineering expertise into a new business, and after an assessment of the businesses available to us, we chose plastics recycling as the one that we wanted to invest our time and technology into.

We worked very diligently for about a year-and-a-half with really understanding, or trying to understand, the status of the recycling industry. Who was in it, why were they in it, where was the industry likely to go, and could we play an effective role in the industry? After this year-and-a-half study and assessment of the industry, we decided as a company, that we could really participate in this industry and might even spur some further development of the industry.

We then sited our facility. Again after some months of study, we looked at various states and locations. We decided to site our facility in New Jersey because we believed that the climate in New Jersey is very conducive to recycling, and we believe that even though at the time that we chose New Jersey, that plastics were not included as a recyclable item, that in the very near future plastics could be included as a recyclable item.

New Jersey is really a partner with us. We financed our business through industrial revenue bonds issued with the State's support and we have, I guess, collected about \$6.1 million of IRBs to make this business possible for us in South Jersey. You have heard from several other people that we have a 40 million pound per year processing capability now, in place, in New Jersey. That was started in October when we commercialized our plant. We're now up to full production capacity, and we are producing reclaimed plastic material at a rate of 5000 pounds an hour.

We employ locally, in South Jersey, 75 people that all come from the Gloucester County area. We have also used the State to help us train those people. The State has provided money for us to get our employees trained and brought up to speed with the operation of our equipment.

We believe today that what you're doing here in this Committee will very much impact our ability to grow our business, and to continue as a business in New Jersey. For our raw material feedstock is only one, and that's the plastic container that is thrown away by the consumer, and we have a vicious appetite -- 40 million pounds of this material.

What you've heard already is, if you are successful in totally collecting all of the PET beverage containers in the State of New Jersey, you might collect 25 million pounds of these containers. We've heard numbers 25 to 35 million pounds. So our plant alone, by its own capacity, could really recycle 100% of all of the used PET containers, soft drink containers, in the State. We also have the capability of recycling high density polyethylene. We do that really as a bifunction of our recycling process.

Most of you are aware that bottles today are two piece containers, with the top part with clear plastic being polyethylene terephthalate, and the bottom part, the black or colored material, is usually high density polyethylene. Our process that we licensed from Rutgers -- and after we licensed that, we spent considerable dollars improving it and bringing it up to commercial scale -- has the capability to separate that material into very useful and high valued end-products. And, that's our whole business today. It is taking these used beverage containers out of the waste stream, bringing them to our facility, reclaiming them, recycling them, and selling them as very high valued added resin.

ASSEMBLYMAN McENROE: You don't make a product. That's your product; the resin.

MR. WILLIAMS: That is our product, a resin material. And that resin material, right today, we're taking orders for material deliveries for the next couple of years. If you were to call as an industry owner saying that you required so many pounds of that material, we could not sell it to you today, because we cannot produce it fast enough. So it's a very exciting industry for us, but it's one that right now has very limited growth with just the availability of material. We're having to bring material in from a wide surrounding area, just to feed the plant. We'd like to start seeing more of that material brought back out of the State of New Jersey.

ASSEMBLYMAN McENROE: Thank you. A question: Do you accept those detergent type bottles?

MR. WILLIAMS: We do not at this point.

ASSEMBLYMAN McENROE: You do not; strictly the two beverage container type bottles.

MR. WILLIAMS: That is correct.

ASSEMBLYMAN McENROE: We appreciate very much your testimony. We do have the Day Products Company-- What county did you say it's in? It's in Gloucester--

MR. WILLIAMS: Logan Township, Gloucester County.

ASSEMBLYMAN McENROE: Well, thank you very much Mr. Williams. We appreciate you coming before the Committee. We next have Mr. Roger Prevot of the Sonoco Graham Company. We're probably going to have a presentation by the Sonoco Graham Company. In this age of electronics, it's nice to have someone very well prepared.

ROGER PREVOT: We'll try to break things up a little bit. I am Roger Prevot, Business Development Manager for Sonoco Graham Company. Sonoco Graham Company is not a company name that you're probably familiar with, though you would be familiar with the bottles we make. We're the largest producer of HDPE bottles in the United States and in the world. Those bottles are in all of your homes. The bottles our company

makes are a big part of the solid waste problem. They are in all of your homes, and we are determined to get them out. What I'm here to really tell you today--

ASSEMBLYMAN McENROE: You're a problem solver, apparently. Okay. (laughter)

MR. PREVOT: What I'm here to tell you today is that the last year has been a year of dramatic change, just incredible revolution in our industry. A year ago when HDPE bottles, the type that are used for all the things in your home -- bleach, detergent, juice, milk, all of those products -- when they were collected they did have uses. There was a market. However, the market was limited to non-packaging applications; things like marine structures, pallets, benches, flowerpots, you name it -- many, many things. The problem however, is that a higher value application wasn't available and an application that would be more insensitive to the price of virgin or new feedstocks, and an application that would match the amount of bottles being put into the waste stream the demand would be matched to what's coming in -- the influx.

What has happened in the last year is our industry, our company, and some others working as well, have developed what we now call "bottles-to-bottles recycling." That is the ability to take a bottle we make, retrieve it from a community, and reuse it in producing another bottle. What that does is, it makes the plastic bottle fit into the same recyclable category as an aluminum beverage can. That is the last year's progress.

Now, I do have a videotape that I'd like to share with you because it invites you into our plant, and it apprises you of the programs we're pursuing. And it shows you that we have the problem that Day Products indicated, Polysource indicated, all these other companies indicated; that thanks to that development and the earlier development of markets for soda bottles and fiber applications, we now have a demand for those

types of packages that far exceed the supply. We need your help. I don't know what the best way for you to help is, but we need your help in getting bottles out of the household, away from the landfills, and into one of the facilities. I am indifferent, relatively, as to whose facility it goes into. Our company will buy a pelletized material from any reprocessor of plastic bottles. That is we'll buy it from Union Carbide, we'll buy it from Wellman -- as we do -- we'll buy it from Polysource. But the battle we need to win, is the battle to get bottles collected.

Probably the best point made today so far, was by Polysource and that is, that we've got to start somewhere. And, as with paper -- and people aren't aware of this as much as you are -- there are all different types of paper, and unfortunately, all different types of plastic, and one by one we're going to win the battle of developing a viable recycling loop for those materials. But, we've won the battle on the plastic soda bottle, and that's several years running now, and Day Products is ready to eat them up, as is Wellman and others. We've also won the battle on the HDPE bottle.

Now, I recognize that it's frustrating to your constituents to hear, "Well, those many other things aren't recyclable yet, but what a great beginning." If you look in your trash in your own household, and see what plastics is filling up the bin, chances are, it's a mix of soda bottles, bleach bottles, and milk bottles. And then the other things are a lesser proportion, lesser percentage, and those things we'll comment on. So, if I can, I'll get this thing going.

ASSEMBLYMAN McENROE: How long is this presentation?

MR. PREVOT: This tape is 10 minutes and there is a point that I could cut in at about 7 or 8.

ASSEMBLYMAN McENROE: Ten minutes? Okay, 10 minutes is all right, we can deal with that. Thank you.

MR. PREVOT: If I can get it running. (presents videotape) I'll stop it there because everyone's been here for awhile.

ASSEMBLYMAN McENROE: Thank you. Thank you. I thought you might come on screen again. We were hoping you'd-- (laughter)

MR. PREVOT: Is it real, or is it-- (laughter) The value or point of that I hope that came across, is that one company is before you today, the leader in making these bottles that are going into your landfills, and showing you -- that's our owner on the screen there, it's his first television appearance -- totally committed to taking responsibility for our bottles.

The point was made earlier that money needs to go into starting new programs. Well, I'll tell you, a lot of money has gone in. Money has been put in by us to develop the technology to use the plastic. Money has been put in to develop recycling plants. By other firms, money has been put in. Money is going in. Now, we're anxious to cooperate with communities. Our company will discuss a long-term contract with a specific community and guarantee to take material or, we'll do it with a specific recycler and guarantee to take material. Part of that guarantee can be a floor price or even a fixed price. The kind of demand from companies like Proctor & Gamble, Lever Brothers, the automotive lubricants companies-- It's real demand, and it's permanent.

Their bottles don't go up and down. That's a real business; that's stable, and if they determine to go to 50%, they'll stay there, and they've made that commitment too. The problem now is that we've got-- A year or two ago we had a missing link. And that was in the technology, and the infrastructure to reprocess. It's gone now.

ASSEMBLYMAN McENROE: What percentage of your old bottles do you reprocess into your new ones? Is it 100% of those pellets totally comprised of what was the old bottle that you're recycling in your process?

MR. PREVOT: The way the technology works is a firm like Wellman or Day or another firm, would take in 100% post consumer bottles and process the material to a pelletized form. Those pellets then are shipped into a bottle making plant of ours and blended or layered with virgin material. Now today there's such a scarcity of that recycled material that we're limited to a very small percentage. The programs you saw there range from 15% to 25% of the bottle being recycled material. I have a bottle in my case that's 100%. We've made bottles with 100% plastics.

ASSEMBLYMAN McENROE: Well, do you think that in five years that the major part of your business will be in 100% recycled containers?

MR. PREVOT: No.

ASSEMBLYMAN McENROE: No?

MR. PREVOT: No, and the limiting factor will be collection. We buy, to make the bottles we produce today, 300 million pounds of HDPE a year. Our goal is to convert one-third of that to recycled material. That's 100 million pounds. I don't know where it's going to come from? The facilities are in place. I don't know where the collected bottles are going to come from?

ASSEMBLYMAN McENROE: I've often heard the concern by environmentalists that the HDPE bottle presents a problem for the waste stream insofar as air pollution, resource recovery facilities, and also for disposal in landfills. Do you want to comment on that? Is this a danger to our society, your kind of container?

MR. PREVOT: The only comment I can make which I think is well substantiated by the Environmental Defense Fund and

other environmental advocacy groups. High density polyethylene is one of the most benign plastics. It is inert, and whether in a landfill or on a roadside or anywhere, its biggest problem is, nothing happens to it. And so, the good news is that it's stable and doesn't leave anything in the groundwater or leave anything going into the air. The bad news is that it sits there. As you pointed out earlier, it's a very durable material.

ASSEMBLYMAN McENROE: And creates no impact insofar as pollution of the air?

MR. PREVOT: No, even in incineration. In an incinerator operating at its normal specifications, it is a very pure high BTU fuel. Now, our position as a company is, we don't want any of our bottles to go to an incinerator. We want to recycle them. If they do go to an incinerator in the meantime, the scientific evidence that we've seen is that there's no harm done and in fact, if you care to, you can extract the energy value.

ASSEMBLYMAN McENROE: How do you feel about voluntarily providing a message on your container that this container can be recycled or, should be recycled? Do you like that kind of government regulation or persuasion?

MR. PREVOT: I think that's a great thing to do. A year ago we couldn't have done it because it wouldn't have been fair to say "recycle this container," and then not be ready to take it. Today we're ready to take them. So if you were to say this container can be recycled, it could be delivered. The problem, of course, is that the types of brands we produce are national brands, and any State legislation requiring special labeling is a difficult burden on the marketer of those products. Tide laundry detergent isn't made just for New Jersey so it would be-- That's more of a nationally practical solution. However, hopefully some of these companies will

begin to mark on their boxes and on their bottles that it's made with "X" % recycled material. So, that's it.

ASSEMBLYMAN McENROE: Very good. Thank you, Mr. Prevot. I don't believe we have any questions. You've done quite well this afternoon. We appreciate that.

MR. PREVOT: Thank you.

ASSEMBLYMAN McENROE: We'll now hear-- You had mentioned the Wellman Company. I know they're located here in New Jersey. Mr. Dennis Sabourin. I hope I'm pronouncing that close to what it should be. Sabourin. (corrects pronunciation)
D E N N I S S A B O U R I N: That's an excellent approximation of my name.

ASSEMBLYMAN McENROE: Thank you. It's the best I could do.

MR. SABOURIN: Yes, thank you. It's a pleasure to be with you this afternoon and be able to tell you something about the Wellman organization. My name is Dennis Sabourin, I'm Vice President with Wellman. Wellman has its executive offices here in Shrewsbury, New Jersey. What I intend to do is, following what the Chairman indicated this morning, to give you an idea of who we are as a company, what we manufacture, how we recycle, what we recycle in terms of percentage, and what can the State do to help us in our quest to recycle.

Wellman is the largest recycler of post consumer and industrial plastics in the United States; as a matter of fact, in the world. We are different than other recyclers in that we make and use products, as well as raw materials, from the material that we recycle. The products that we manufacture are engineering resins for the injection molding business and polyester and nylon staple products. Those staple products are utilized by our customers to make things like carpeting, geotextile fabrics, blankets, filling for furniture, and the like.

We are committed to recycle at the curbside as our major effort in promoting recycling. We, today, have the capability of recycling in our existing facilities, 160 million pounds of post consumer plastics. Last year we recycled more than 110 million pounds of post consumer plastics in our operation.

Assemblyman Shinn talked about the stable markets in plastics recycling. Well, Wellman has been recycling since 1964, starting first with industrial recycling and we have been recycling post consumer plastics since 1979. At that time it was only PET bottles. We today, in the United States alone, could utilize more than 425 million pounds of post consumer plastics for our domestic operations. If you consider our European operation, we could utilize more than 625 million pounds of post consumer plastics.

I am echoing what some of the other speakers said earlier: We cannot get the plastics we need to operate our facilities. In terms of economics, as Assemblyman Shinn pointed out, we have had a stable market since 1979. Plastics continue to be -- and has been since 1979 -- the second most valuable recyclable; second only after aluminum. We continue to expand and we will be expanding our facility to take plastics other than those which we are currently recycling. Today Wellman is recycling PET beverage bottles, and water and milk jugs made of high density polyethylene. Those two products have the highest value; therefore, we can offer to communities the highest value for their products, and can offset the costs that Representative Shinn mentioned, the high cost of collection.

We favor the collection of other plastics from the solid waste stream, but only after sortation systems have been developed, and they've not yet been developed on a large scale. So, our position is that we will continue to recycle and urge you to add as a mandatory recyclable, beverage

containers and water and milk jugs made of high density polyethylene at the curbside, and to look to adding the other rigid plastics as sortation systems are developed.

ASSEMBLYMAN McENROE: What are you recommending as far as sorting systems? I mean you're seeming to--

MR. SABOURIN: Yes, we are developing, sir, a sortation system that will take a mixed stream of plastics and sort them into their generic types. This is really the answer to the commercialization of recycling. To be able to take a generically separated plastic after it has been taken from a mixed rigid stream, and then be able to manufacture a product from that as Roger Prevot said, the high density polyethylene bottles, or making a product made of polyester, PET, or making a product made of PVC.

We feel that will develop in the not too distant future, and we should evolve into that as those systems are available. In that way, we could offer value for a high quality product, and then give continuity to markets. That is really the essence of my presentation today, sir.

ASSEMBLYMAN McENROE: Thank you. When you say, "in that not too distant future," can you pin that down a bit?

MR. SABOURIN: One year, sir.

ASSEMBLYMAN McENROE: One year from now you think if legislation worked its way through the Committee process and was accepted by the Governor as good law, that you'd be prepared and ready for this new process?

MR. SABOURIN: Well even more than that, sir. We could today, accept PET and high density polyethylene water and milk jugs. The mixed stream, Wellman will have within a year. I can speak for Wellman.

ASSEMBLYMAN McENROE: And ability to deal with it.

MR. SABOURIN: That's correct, yes sir. We can take now the two, PET and HDPE. The mixed stream we could separate in a year.

ASSEMBLYMAN McENROE: Okay. How much of your operation is centered in New Jersey?

MR. SABOURIN: Very little today. We are buying raw material from New Jersey, but we have a recent venture called New England Crinc, which we've announced the purchase of, which is a state-of-the art multimaterial recycling facilities. We see that as being an opportunity for further expansion in New Jersey. As a matter of fact, the Crinc technology is being used in the Cumberland County MURF that's under construction, and we see that as an area for expansion. We have today, two bottle cleaning facilities, one in Allentown, Pennsylvania, and the largest where we employ 1900 people, is in Johnsonville, South Carolina. We utilize the material from New Jersey as a source of raw material. We look at the MURF concept as our next dollar capital expansion in the State of New Jersey

ASSEMBLYMAN McENROE: So has New Jersey been a profitable experience for your company?

MR. SABOURIN: Yes. It has been a slow-go, I'd have to say, because we are working diligently to have plastics picked up, and it has been an effort that has not been as successful as we'd like to have seen it. But, we feel that if we continue to work at it, and it will pay dividends.

ASSEMBLYMAN McENROE: Okay. Thank you, Mr. Sabourin. We appreciate your coming before the Committee with your testimony. May we hear now from George Glenn, Wheaton Plastics? Mr. Glenn?

G E O R G E G L E N N: First of all, I'd like to thank you for inviting me here to speak before you. My name is George Glenn. I'm General Manager of Wheaton Plastic Recycling Company, a division of Wheaton Industries located in Southern New Jersey, in Cumberland County. A little bit about the facility itself and our industry as a whole:

We are a company that is presently privately owned, the oldest in the country. We're approximately 105 years old

to this date. The company was started primarily as a glass company. From the advent of plastics we got into -- right after the post war era -- we got into injection molding and injection blow molding procedures. We held patents for machinery for injection blow molding. We're the first to manufacture machinery for high density, low density, and PET; presently what's being used for soda bottle containers.

We had a problem within our industries. We presently own approximately 26 plastic facilities and over 16 glass companies, worldwide. We're in China, Brazil, all through Europe and Australia with associates. Our major problem was disposal of plastic waste.

Being a pharmaceutical and a cosmetic company, our specs are so high that we had a massive problem as to the amount of plastics being able to be reutilized back into the finished product. Our specs were so intolerant at times, that the material was not able to be used. It would have to be sold to a low end user. Mr. Wheaton foresaw this as a major expense to our company and a total disadvantage to us, as one of the major leaders in this industry as it is. So with the advent of approximately about a year-and-a-half ago, he put me upon the task of building him a facility in Southern New Jersey, very close to the

Corporate headquarters, for the process of recycling, not only our post industrial material from our facilities, but also attempting to get into the post consumer market.

We're approximately a year old to this date. I'm presently picking up in 23 different communities within the Southern Jersey area. We did everything on a voluntary basis. There were no contracts signed with any of these communities; basically because we wished to feel the outcome -- public outcry, for what they would request. We provided trailers to the communities at no expense, where they would place their plastic containers into the trailer. We would pick these

trailers up, take them to our facility, have them segregated, granulated, washed, repelletized, and remanufactured.

We're unique in the fact that we don't highly publicize our company. Being privately owned, it's more advantageous that we prove that we have a very good set groundwork before anything is allowed out. What we are also unique in is that we are also a remanufacturer, all within the same three facilities.

What our most present problem, as I guess voiced by my predecessors before me, is the fact that our feed stock is extremely small, being dependent upon just the Southern Jersey area. We are now presently accepting materials from as far away as New York, Florida; wherever I can possibly get ahold of the material. The demand for it, whether it be Sonoco Graham, Rubbermaid, or any other major manufacturer such as Wellman, Day Products, so forth, is so highly -- I guess the best word-- The appetite is just so aggressive as one stated before, that there's no way I could possibly keep up with the demand for a good, clean, quality product, unless something is done in the near future to implement some form of program to make it advantageous to industry to utilize the post consumer material. Being a pharmaceutical-cosmetic, obviously, we are not allowed to use it in present bottle manufacturing that we do, or in injection molding procedures. So, it's also brought us into a newer advent and a new market which we had kind of let go many years ago, because we considered ourselves a high-quality, high volume area.

So, really what we've done is put ourselves up on a pedestal and now have turned around and tried to regain a lot of the infrastructure that we had lost over the many years of placing ourselves up so high. And, what I'm presently requesting and asking is that something be done in the near future to help us an as industry, as well as a community, to

guarantee some way of continuing in our business venture as it is. Us providing the transportation for mixed, commingled material to our facility at no cost to the townships, is extremely expensive as you can well agree with. But the idea was done to see what the public opinion would be, and to perceive what, I guess the community as a whole, would like to do. Not given any guidelines by the government, we gave no specifications, no limitations. We just said, "Please place these containers within our facility; we will take care of them from there."

Now public pressure has been, where we've been forced to ask the communities to help participate; either in helping us trail these in hauling fees, so forth, just to guarantee that this material -- that something we have started will continue with them. I think it would be wrong in every way, shape, and form to have started something -- and we will not back away from it and just totally leave it -- but I think it would be wrong for the government not to help and aid industry, which helps and aids in the income of Southern Jersey, Northern Jersey, wherever it would be at that particular time, but to help us maneuver and help us grow as a company.

My company will only grow as well as the community grows. Presently we employ 40 full-time workers. We worked through a whole facility handling handicapped workers, which we found to be very advantageous to doing specific jobs, and we're running 24 hours a day, five days a week. Essentially, that is the whole jist of my business, and, I would just ask for your support. The facility is always open for visitation, and we would encourage it in any way.

ASSEMBLYMAN McENROE: Thank you. I know the reputation the Wheaton Industries has in New Jersey and around the world. I appreciate your summation of your experience. In other words, you're strongly supportive of any effort to require mandatory recycling.

MR. GLENN: Yes. Myself-- As just from a personal point of view, something has to be done sooner or later. We have very few avenues to approach. You either incinerate it or you recycle it. We have no in-between ground left anymore. We have no facility to dump it, we have no cost-effective method of handling it. This to me is my only personal opinion as to what can be done in a safe, effective manner. And, we are just simply asking for your support in any way, shape, and form.

ASSEMBLYMAN McENROE: And do you deal with all the plastic materials, the scrap plastics--

MR. GLENN: We're dealing specifically-- We requested only specific containers. In the beginning it was PET soda bottles, whether it be green or clear, milk bottle containers, but the public being the public, you're going to get a mixed batch of essentially a lot of different materials. So what you do is, you learn to cope with that, and your company has to learn to deal with that as it grows. I don't foresee right now a major advantage to commingling everything in God's acre -- toys, and so forth because it is extremely difficult.

Our process right now is such that it's done on a visual means; it's not done on an automatic. To the best of my knowledge, there is no real effective method right now in that form, so we're depending upon a visual inspection of the material for people to be able to place it into different segregated containers. That, I see as something, yes, that will come in the future, but I don't see inundating the world with a problem and claiming we have solutions when at times there are-- The stage is not set for that particular--

Yes, it will come. It will come very soon, I'm sure. But, my suggestion as a person who's from Wheaton Industries is, gradually grow into something. If you inundate the public with a lot of rules, regulations, and so forth, you should be expecting problems. But we, as an industry, will help. And we will continue to help, as we have.

ASSEMBLYMAN McENROE: Thank you very much. I appreciate you coming before the Committee. We have also Mr. Porrazzo. Sal Porrazzo representing Pepsi Cola Company. I appreciate everyone being patient this afternoon. This has been a long hearing, and I do want to give everyone an opportunity, so we'll move right along. Mr. Porrazzo, welcome.

S A L P O R R A Z Z O: Thank you, Mr. Chairman and the Committee. I welcome the opportunity to speak today. I am the Director of Environmental Affairs for the Pepsi Cola Company. Pepsi Cola also supports the Plastic Recycling Corporation of New Jersey. I am the current President of that organization. We also support the Center for Plastic Recycling Research at Rutgers University, both in executive capacity and board membership. And last, we also support the Coalition of Northeast Governors' Solid Waste Council. Pepsi Cola is on the board of directors.

We're working very hard to have our packages recycled, especially in New Jersey; especially PET. Since it has not been included in the curbside, it's made it very difficult to get PET recycled, and we've spent a lot of time in trying to accomplish this in most places. PET represents a major portion of our business in New Jersey, and also, because of its large size, and the fact that we can deliver two litres in one container, it makes it a source reduced package as well as an economic value to our consumers.

All of our packages are highly recycled. In fact, they're being recycled nationally at a strong rate. Because of the current Mandatory Recycling Act specifying three materials plus yard waste, PET was left out, and it's very difficult to bring it back, after the fact. But now that PET is being recycled in some communities in New Jersey, we'd like to see PET treated like all our other packages that we market in this State. As a result of this, possibly you would consider adding

PET to the recycling network currently existing with the Mandatory Recycling Act. That's all I have to say. Thank you. Any questions?

ASSEMBLYMAN McENROE: Thank you Mr. Porrazzo. I appreciate your comments on behalf of your company. It is one of the matters we have under consideration in the Committee. We have Wayne Defeo, Mid-Atlantic Region National Solid Waste Management Association. Mr. Defeo, if you would join us please?

W A Y N E D. D E F E O: Mr. Chairman, thank you for the opportunity to speak today. With me is Darlene Snow. Darlene is our manager of the Waste Recyclers Council which is part of National Solid Waste Management Association. I take this opportunity again to thank you on behalf of NSWMA to speak here today.

We know that recycling is certainly a critical issue in the State of New Jersey. We believe that much of the testimony given today has, hopefully, been quite useful to you. We also have a tremendous amount of information in our storage, which I'm not going to burden you with this afternoon. Of course, I offer that to you at anytime, if you would like it.

I'd like to reecho a few things here today; one of which, as we have heard on several occasions, is that there is a market for many materials. There is the capacity to recycle many of these materials. The problem has been the collection and getting materials to those facilities. I believe I can safely say that it's our members that can best do that. Our members are nationally, of course, over 2500 companies and in New Jersey over 170 companies -- nearly 200 now, that deal in collection and transport. They've been transporting and recycling materials for many, many, many years. Of course, they can move the material more efficiently than most others, because it's really not much different than the solid waste they haul. It's just in a clean form, if you will.

I'd like also to agree with the fact that John Czapor spoke first today, that recycling and counting everything is critical. As you know there's been a lot of talk in New Jersey regarding 50% targets, 60% targets, whatever, but one has to have a percentage of something, and I applaud the DEP for taking a stance that we should count the entire waste stream, because without counting that, we really don't have a percentage of a true figure.

One of the elements of recycling that has been discussed is the fact that residential recycling is critical. Residential recycling is critical for several reasons. We are trying to adjust the behavior of over 7.5 million people, and that is no easy task. You've heard the danger of contamination of recyclable materials; that you bring in a load of materials, it has less value. We know also, that it is difficult for municipalities to run recycling programs cost-effectively.

Of course, when a municipality runs any form of collection program, the true cost of that program is hidden. The taxpayer does not know, per se, what actual costs are, and we endorse DEP's comments earlier as well that the true cost of solid waste and recycling should really be made known to people, because this thing gives them a true cost of the product they are buying. For example, if they are buying a less durable good they should know it's going to cost a certain amount of money to throw that good in the garbage later, when it might cost them "Y" to recycle it. In terms of recycling materials and total amounts, I'm going to turn to Darlene for a moment, because Darlene has a national picture, and that may help us in New Jersey.

D A R L E N E S N O W: Mr. Chairman, thank you for the opportunity to speak. What I'm here today to impress upon you is that our industry -- and you may not have an idea of exactly the scope of our industry; we include not only the refuse haulers but many of the recyclers in the country and landfill

operators, and obviously waste-to-energy companies whom you've already heard from. Our industry has almost one-half billion dollars invested in recycling in the United States. We have some preliminary estimates of our investment in New Jersey and it's certainly in the tune of several million dollars. We expect that those numbers are very low because we've only gotten a few numbers in from some companies.

We have recycled several million tons of material in New Jersey alone in 1989; a lot of paper, some aluminum cans, glass, plastic containers, yard waste, concrete, and asphalt. We, as an industry, provide curbside collection to over 2.5 million households in the United States, and we're actively investigating new areas or new potentials for recycling. If you take the waste stream composition, we believe that at least two-thirds of the waste stream is potentially recyclable, and as Mr. Defeo has pointed out, if we can get seven million households to participate in New Jersey, that we may be able to well exceed New Jersey's recycling goal of 25%.

Basically then -- and to say that from our survey of our membership -- the main things that are actually driving recycling in localities is effective legislation, which surprised us; that they are actually looking toward mandatory recycling legislation to increase recycling and public education.

The two main elements that are barriers to recycling would be the lack of education and market development. So we are actively involved, as an industry, in education and market development efforts. Thank you.

ASSEMBLYMAN McENROE: Thank you.

MR. DEFEO: Also, on the note of talking briefly about the increase in education, again I'd like to take the opportunity-- It's not often that industry can take an opportunity to applaud a State agency, so whenever I can, I like to do so. I would like to applaud the DEP for its education efforts to date--

ASSEMBLYMAN McENROE: They need all the help they can get. They really do.

MR. DEFEO: --and encourage more, because we do need it. I also would like to take the opportunity to talk briefly about commercial recycling -- very briefly. It's an area that was not touched upon in great detail today.

The commercial sector has many unique problems in terms of recycling. It's primarily paper waste; paper and corrugated. That problem stems not so much from the ability to recycle, but from the ability to store those materials. What occurs in many of our smaller commercial establishments that many of our members serve, is that they cannot store the paper, because by storing paper for recycling, they are in violation of fire codes. And it's not through anyone's fault. It's simply those buildings were not designed for storage of paper; that's not what they were many years ago. And in that regard, some of our commercial customers have a problem with true source separation, and the State obviously has recognized this, as has the Legislature, by granting municipal exemptions to individual generators that can prove they go to a licensed materials recovery facility. I would point out that many of our members have such materials recovery facility permits, and we encourage many forms of recycling in the State of New Jersey. That's the primary message here.

Source separation: We support it 100% where it is practical and where it can be done safely. Where it can not be done safely, of course, the State has given a very thoughtful process to another form of recycling, and that is through a licensed transfer station with a licensed and permitted materials recovery facility. And again, we'd like to thank the State for thinking that far ahead.

In closing, all I would like to stress is that NSWMA again supports recycling. We are here to help in any way that we can, via our members, who are all very interested. We do

recognize that there are costs associated with recycling. We recognize that those costs should be made known to the consumer; to the generator. None of our collectors, as nice as they may be as individuals, can afford to run trucks and not be paid for their services. We'd just like to say to recognize that, and for you to consider that. Thank you for the time today.

ASSEMBLYMAN McENROE: Thank you. I have a question, though. Now you're in the collection business--

MR. DEFEO: Well, I represent the collection business--

ASSEMBLYMAN McENROE: Okay. Pardon me. I guess both of you represent the collection business.

MR. DEFEO: That's right.

ASSEMBLYMAN McENROE: I didn't expect that either of you were the CEO of the National Solid Waste Management Company. (laughter)

MR. DEFEO: All in good time.

ASSEMBLYMAN McENROE: If you're in the collection business, do you strongly support residential separation and recycling, or wouldn't you rather do it yourself, since you're in the collection business? Wouldn't you rather do your own recycling, and based on the profit of the organizations you represent, wouldn't that be a more businesslike approach?

MR. DEFEO: I may defer to Ms. Snow on this, but I would suggest that the comment was made earlier that the prices paid for certain materials can offset the cost of collection and processing. I would submit that that's not accurate; that the prices paid could not possibly offset the costs all by themselves. Having run a recycling program, I can say that the prices, when they were much higher, especially in the paper area, offset about 20% of the total costs of an operation. So, you can't make money, per se, just on the recycling. It is on the service provided, and by the bill for that service, I believe that profit can be made. Would you concur?

MS. SNOW: If I understand your question, I can answer it in two ways: One is, generally speaking, our members prefer that residential waste be source separated and that commercial waste be kept mixed and they will sort that at a sorting plant at a transfer station. If the customer has enough waste, they may actually ask them to keep it separate on-site.

As far as the cost, from the numbers we've seen on residential -- the revenues from the materials when the revenue was probably a little bit better two years ago -- covered about 15% to 40% of the collection cost. So, in order for the service to be provided, it has to be considered a public service, in essence, so that it's similar to refuse collection, and in order to have it done, it won't happen with free market competition. There is an example, however, of several haulers who will offer their residential customers, without a municipal contract, recycling for a certain price. And they will say, for four dollars a month or two dollars a month, I will pick up your recyclables once a week separately. That would be one way of the free market system working, if the public wanted it badly enough.

ASSEMBLYMAN McENROE: But you are submitting -- I'm sure correctly -- that transportation and collection-- That's the major part of the equation, the cost.

MS. SNOW: Yes.

MR. DEFEO: It's very costly.

MS. SNOW: And, in fact, processing costs may actually escalate for a period while we're trying to meet more stringent mail specifications, because the volume of material going to markets is much larger, so they're getting a larger percentage of contaminants. We have to produce a cleaner product than we had to in the past.

MR. DEFEO: I would also point out that in New Jersey it is more difficult for our companies to become more involved in recycling because of the current spate of regulation at the

Board of Public Utilities. It does hinder, as much as the regulations try not to, companies making capital investment. On a national scale we see more companies doing recycling than we do in New Jersey simply because there's that excessive regulation in this State.

ASSEMBLYMAN McENROE: Isn't that for another hearing though? (laughter)

MR. DEFEO: That's for another hearing. I just wanted to add that as a closure.

ASSEMBLYMAN McENROE: Thank you very much for coming before us. I appreciate it. Okay folks, we're in the home stretch here. We have Diane Mensinger representing Union Carbide Corporation. (Chairman informed that she is not present) We did hear from Union Carbide a bit earlier, so we'll assume the testimony she would provide would parallel that provided by, Mr. Rouse, I believe it was.

Michael DiFranco, Occupational Center, Orange, New Jersey. I'm familiar with the operation of the Center and I know how involved they are in recycling and collection -- collection of recyclables, I should say. Good afternoon.

M I C H A E L D i F R A N C O: Hello. Thank you. My name's Michael DiFranco, I'm the Director of Recycling Operations for the Occupational Center. The Occupational Center of Essex County is the oldest and largest nonprofit vocational training center in New Jersey, founded in 1954 to assist disabled adults learn skills to make them employable and gain potential for self-sufficiency.

One year prior to mandatory recycling, in March 1986 the Occupational Center of Essex County began curbside recycling as a means of training our handicapped clients. Since 1986 we have grown to service 14 municipalities and over 125,000 households in Essex and Bergen Counties. The Occupational Center is one of the largest collectors of

recycling in New Jersey, and one of the few nonprofits who perform curbside collections.

We started collecting used newspapers, then later added glass and aluminum to our collections. When we compare tonnage of what we collected in 1988 to 1989, we experienced over a 50% increase in weight -- just going from '88 to '89. To me, this indicates people in New Jersey have definitely become more aware of the necessity of recycling. People are looking for more information and want to know what they can do in the recycling effort. We constantly get calls: Can we recycle this; can we recycle that? The more informed people are, and the more convenient the collection schedule is, the greater the participation in the program. It has been our experience, through our newsletters and a more frequent pickup schedule, participation rates increased substantially. When we started providing newsletter service to the towns we collect recycling in, within a week after the letter went out-- I found out from our drivers that come back and tell me: This household put it out, they never put it out before; this one did, so the newsletter constantly increases people's awareness and increases the amount of material that's being collected.

The Occupational Center believes in recycling. It believes in recycling because it is a necessity in our world, and also because it provides work opportunities for our handicapped and disadvantaged workers.

Although we believe in the addition of PET and HDPE to the list of designated recyclables, there are some inherent problems with the collections of plastic. Two of the problems facing the municipalities with the collection of plastic are an increase in the volume of material being collected, which generates an increase in the manpower hours required to collect it, resulting in higher costs, and the other problem is the limited number of markets that deal with plastic. There's not many choices for municipalities to consider for its markets. I

know we've heard from a lot of people who the end market is -- and they're willing to accept all the plastic they can get -- but as a whole, and as a municipality, the material has to go from that municipality all the way to the market, and that's where the problem comes in.

Being in Essex County and having a lot of the plastics markets in South Jersey doesn't help at all. There's a need for more markets in more strategically located places, because as was stated earlier, a lot of the costs that come in with recycling is the hauling of it to the market.

Over the past year, waiting times to unload materials have increased substantially at the markets. Another problem that the hauler faces with plastic is that the equipment available to collect plastic is not efficient, and does not make it simple to collect. There's nothing currently available that would make it easy for a hauler to collect plastic. Depending on how a town is already collecting the material, someone had stated earlier it could be added very easily to the collection. But some towns collect material color separated, some towns collect it commingled, and depending on how they collect it, it makes a difference in how easy it is to add the plastic into the mix.

We would like to make some recommendations to the Legislature. If plastic is to become a designated recyclable:

- 1) Provide a funding mechanism, some sort of financial rebate for collecting plastic -- a special incentive, something in the tonnage grant package that would afford communities extra money if they're collecting plastics, in order to encourage them to start collecting. Also, to provide funding for the education of the public through newsletters and brochures. Provide funding to improve the collection methods, and enforce all recycling laws to both residential households as well as the commercial and industrial sectors of the community.

This is probably one of the areas that would most rapidly increase the amount of the recycling material because we don't see any enforcement on the commercial and industrial level for recycling. There's a lot of industry out there that winds up saying everything's put in the garbage and it eventually gets separated. Well, most of that doesn't really get separated. And I think if there was more enforcement along those areas, the amount of recycling material would increase substantially. That's really all I have to say. Thank you.

ASSEMBLYMAN McENROE: Okay. Thank you very much. Most of your comments I certainly agree with regarding enforcement and the need for education. I'm very familiar with the Occupational Center and what it's meant to its clients, and what it's meant to the communities of Essex County, insofar as the good job they've done through the years as far as recycling efforts in Essex County. So I do appreciate you coming before us. Your comments, of course, are part of our public record which we'll review both at staff level and among the members of the Committee. So, my appreciation for coming here today, Mr. DiFranco.

MR. DiFRANCO: Thank you.

ASSEMBLYMAN McENROE: Next, we have Clare Schulzki representing the New Jersey State Chamber of Commerce. Ms. Schulzki.

C L A R E S C H U L Z K I: Good afternoon Assemblyman McEnroe, members of the Committee. My name is Clare Schulzki, and I'm Associate Director of Government Relations for the State Chamber of Commerce. We welcome the opportunity to comment today. Many of our members have made substantial investments in plastic recycling technology and commitments to using recycled materials. Today you heard from McDonald's, James River/Dixie, and Union Carbide. I feel my testimony is pretty anticlimatic after all the testimony we heard today, so I'll be very brief.

The State Chamber has long been a supporter of recycling. We put it into practice in our own office. We've also encouraged our members to create markets and opportunities to recycle materials, and they've done so and will continue to do so.

We believe New Jersey has come a long way with recycling, but has further to go yet, specifically with plastics. In 1986 only a few municipalities recycled PET and HDPE plastic bottles. Today we heard from DEP that plastic recycling has gone up by 1000%. We believe the demand for recycled plastics will continue to grow and more processing facilities will continue to open.

Earlier, Mr. Connelly mentioned a study conducted late last year on the economic feasibility of adding plastics to curbside plastics recycling programs, and the benefits were larger than the cost of adding materials to the program. In other words, it's cost-effective to recycle plastics. I know there's been conflicting testimony today about the actual cost benefits of recycling plastics, but I think when you look at the money that is saved by avoiding landfill costs, you can see the benefits. As our waste disposal costs continue to rise, the cost savings of recycling plastics will also continue to rise.

In the past year there have been several proposals to ban certain types of plastics, because they don't degrade or disappear. We don't believe this is the most effective way of handling our waste. The fact that they've been touted as a solution is really misleading and could be counterproductive to long-term plastic recycling efforts.

Unsightly trash on the roadside that's improperly disposed of is a litter problem, not just associated with plastics. Our members in business, large and small, have addressed this and contribute to the Clean Communities Program. It's people who litter when they're driving to the

beach, and they throw their coffee cups out the window or leave their soda cans behind. We need to continue to change people's habits and educate them on the benefits of recycling.

The Chamber supported the passage of Public Law 268 of 1989, which makes plastics recycling even easier by adopting a uniform plastic container coding system of the Society of the Plastics Industry. Containers will be coded with a number which will aid in determining the type of plastic and its content.

In our everyday lives we've come to rely on plastic for good reason, including its light weight, strength, and low cost. We believe that recycling of plastics does and will continue to have a substantial cost benefit to both citizens and the business community. We heard today that there is a market for plastics by industry, and they're fighting to get those materials. New Jersey's a natural leader in recycling, and the measures we've outlined can go a long way toward developing the necessary infrastructure to make us a leader in plastics recycling, as well.

Thank you for the opportunity to speak today. Do you have any questions?

ASSEMBLYMAN McENROE: I really do not, but I appreciate very much your testimony; right on target. And we appreciate the Chamber's strong commitment to recycling in our society. We have Edward Cornell, Waste Management Association. Did you want to testify? I wasn't sure whether you were testifying or observing.

EDWARD CORNELL: Thank you. I left a slip here.

ASSEMBLYMAN McENROE: Oh, I'm sorry.

MR. CORNELL: Thanks very much. Good afternoon, Mr. Chairman. I know it's been a long day so I'm not going to be long at all. I'm going to be very short.

I represent the Waste Management Association of New Jersey. It's a trade association representing approximately 80

to 85 of the companies owned by private haulers in the State. Our companies were in the business of recycling long before it became environmentally fashionable. Waste Management members continue to have a commitment to promote the advancement of New Jersey's recycling goals and help resolve the solid waste problems in the State of New Jersey.

Some of our companies have moved recycling technology into the 21st century, we believe. Their successes are models for recycling throughout the industry. One of the reasons I stayed to address you today is that we urge the Committee to urge the State departments to include private haulers in the actual picking up and delivering of the recyclable materials. Although there are some companies that are in it and very big, there are other companies that have transfer stations and facilities that are not allowed to use it for this type of facility -- for recycling; commingled or otherwise. That's a shame because siting anything in the State of New Jersey having to do with the solid waste crisis today is almost impossible. It's political suicide for the local mayor to do it, and we have shown where one of our past presidents bought a building to do it, and they burned it down.

So, it is a problem that we stand ready to invest in, and we stand on call waiting to make a contribution into this industry. While we're waiting there, we've got regulations on solid waste, which I don't want to get into. However, now you're talking about a regulation of the recycling industry which, really we don't care, because we already have all that regulation in the solid waste business. But we caution that if you do anything to overregulate -- and you should have regulations; don't get me wrong, you have to have environmental regulations -- if you overregulate, you're going to increase the cost of what we're talking about today. You're going to decrease the interest in people participating and investing private funds into the problems we have today. The banks have

become shy, even with our industry, because we have such large tipping fees in the solid waste area, and we can't get bonds to cover the amount to collect waste in local communities. So now we can't get loans to improve and build recycling facilities, buy trucks, and that type of thing.

The whole solid waste situation has to tie in with recycling. And we feel that if we would get some encouragement by the departments in this State having to do with recycling and solid waste, our people would then feel as though they could actually participate in greater depth and greater quantity and volume, into the recycling aspects. We have two -- off the top of my head -- recycling industries in advanced waste systems that are now recycling 48% of the waste they take into their recycling centers. One is waiting for an approval; the other one has an approval.

You go to these recycling forums and you see towns being -- plaques and everything in appreciation for 14%, 18% -- this type of thing. And that's great, they should be. But the industry is never recognized for what they're doing in the recycling aspects of it. And I know, you probably didn't want me to come out-- I've got to tell you some of the problems if you're going to see the progress you've made. And you have made progress. The State has made progress, and they should be complimented for it.

But there are problems that we have. I have an example. I'm President of a wood chipping firm. We do wood chipping. We ship to Proctor & Gamble approximately 400 ton a week. And there are people in the State departments, and this is-- It has to be truthful because I've heard stories like it, but I'm personally involved with this one. The State Department tells certain people that they can't bring us source separated recycling material because we're not State approved. Well, the State had told us that while we're operating and waiting for approval, we could take it. So, there's

counterproduction measures going on that we feel, on the pickup and transportation, and market end of the recycling business that maybe the Committee doesn't know, maybe the Department doesn't know, and I've decided to stay and just try to make you understand those.

The mandating of plastics is great, and I think it's going to produce more plastic recycling and certainly get rid of a source of a product that we thought we wouldn't have a source for. But as you mandate any product, you're going to reduce the value in the marketplace. You're going to, because other states are doing what we're doing, you're getting-- That's a supply and demand situation. I don't have to give you that. We charge at our wood recycling plant nine dollars a cubic yard to dump at our facility. We don't get anything from Proctor & Gamble to deliver it over to them. That's what's happening in the recycling field, and we think sooner or later the paper market may be the same way. We have a Mr. Chips for wood, we'll have a Mr. Paper for paper, and a Mr. Aluminum for aluminum. I mean, something's going to happen when the CEOs of these companies start realizing that it's a lot cheaper than going to the dump at \$134 a ton in Union County, let's say, or \$137 a ton. You bring your wood down to Mr. Chips. You're saving a fortune in what you just picked up from a demolition job, or this type of thing. So, these are trends that are happening.

We see the paper-- The paper and corrugated market over the years has always been an apex and a decline. We had to store it. Now you can't store it. But at one time you had to store it till the market went up or you'd be operating at a giveaway price. You had to pay to get rid of it at times back then. So, the reason I came down was to listen, and I learned an awful lot today by the people before me, and I just thought I'd add a little bit to your meeting.

ASSEMBLYMAN McENROE: Thank you. I appreciate it very much, Mr. Cornell.

MR. CORNELL: If you have any questions I'd be happy to answer them.

ASSEMBLYMAN McENROE: Thank you. I don't really believe I have. I appreciate your preparation and your comments. The hearing, I believe, is concluded. We have had testimony from over 20 individuals, all impacting on what New Jersey should do in the area, and what they have done, and what their experience has been in recycling. So, on behalf of the Committee, I conclude the hearing with much appreciation, and I think we're well prepared to review the testimony and prepare appropriate legislation or coordination with our DEP and other State agencies. Thank you all very much.

(HEARING CONCLUDED)

APPENDIX

RECYCLING INFORMATION PRESENTED BY:
NJDEP DIVISION OF SOLID WASTE MANAGEMENT

BEFORE THE:

ASSEMBLY WASTE MANAGEMENT, PLANNING
AND RECYCLING COMMITTEE'S PUBLIC HEARING ON:

"RECYCLING IN NEW JERSEY: PROGRESS REPORT ON THE RECYCLING
OF ALUMINUM, GLASS, PLASTIC AND NEWSPAPERS"

MAY 10, 1990

MANDATORY RECYCLING PROGRAM

- Final Goal:
 - 25% of Municipal Waste Stream By Dec. 1990

- Interim Goal:
 - 15% Of Municipal Waste Stream By 1989
 - * The municipal waste stream is 60% of the total waste stream

- 1988 Statewide Rate:
 - 15 % Municipal Waste Stream
 - 24% Total Waste Stream

- At Least 3 Materials and Leaves

- Approximately 530 Municipalities With Ordinances
 - All Recycle Paper, Glass & Aluminum
 - 207 Recycle Plastics
 - 190 Recycle Tin/Bi-Metal Cans
 - Corrugated & Office Paper Also Recycled

- Market Development Activities
 - Business Loan Program
 - Tax Credit Program
 - State Procurement:
Recycled Paper Must Be 45% of State Purchases (Current Rate is 59%)

- Recycling Centers For Tires, Construction & Demolition Debris Reviewed & Approved By DEP
 - 6 Approved: 2,500 Tons Per Day Capacity
 - 34 Under Review: 18,000 Tons Per Days Capacity

NEW JERSEY RECYCLING DATA BASE ANALYSIS

New Jersey State Library

NEW JERSEY RECYCLING DATA BASE ANALYSIS
 CALENDAR YEAR 1988
 (TONS PER YEAR)

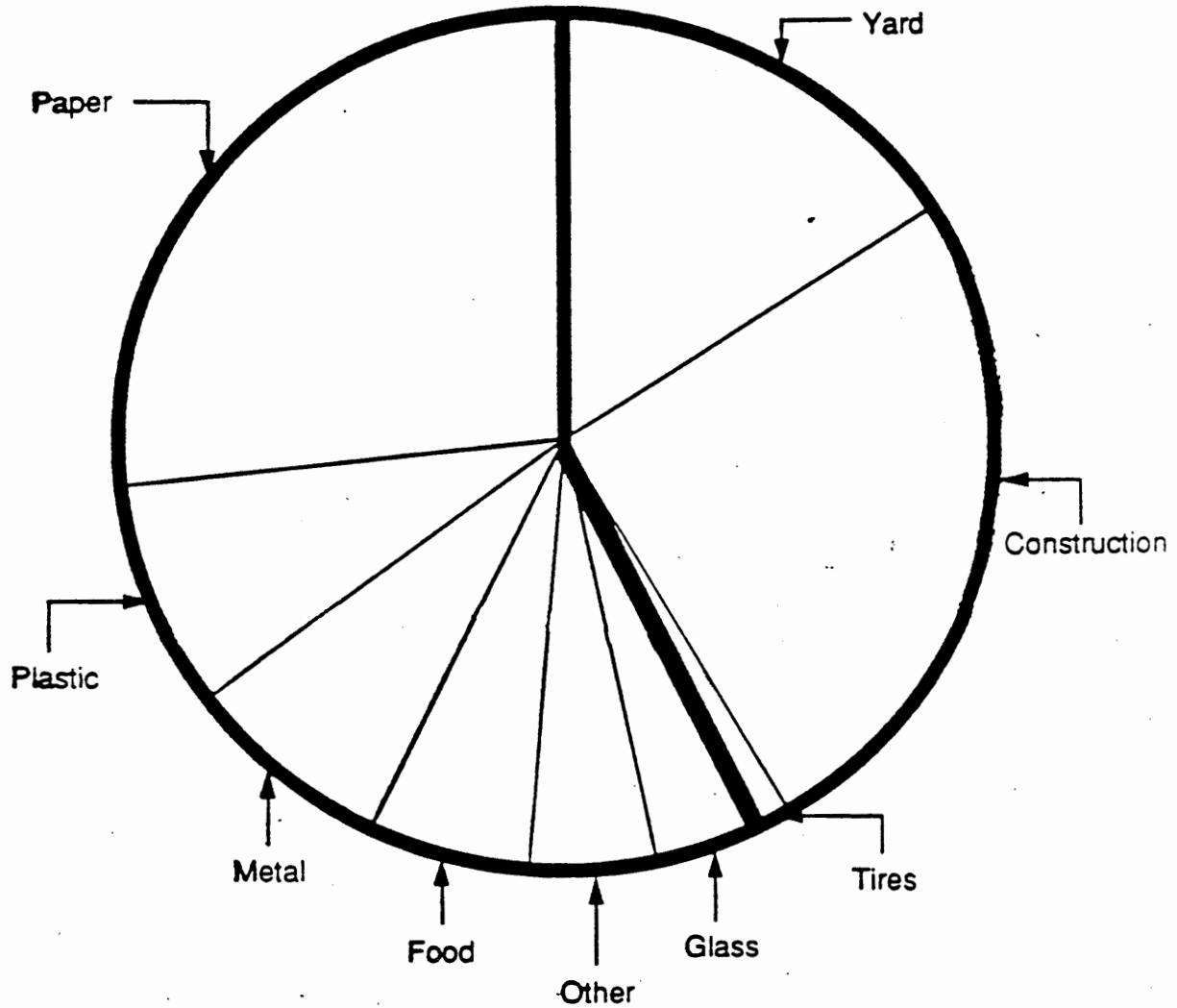
1	2	3	4	5	6
MATERIALS	% TOTAL WASTE AS DISCARDED	1988 TPF DISCARDED	1988 TPF RECYCLED	TPY GENERATED (DISC + REC)	% RECYCLED BY MATERIAL
=====					
** P A P E R **					
CORRUGATED	8.64	768,929.76	293,126.00	1,062,055.76	27.60
NEWS	4.58	407,603.97	359,879.40	767,483.37	46.89
OFFICE	4.73	420,953.45	137,704.20	558,657.65	24.65
OTHER	9.23	821,437.70	0.00	821,437.70	0.00
** G L A S S **					
CONTAINERS	2.73	242,960.45	122,300.62	365,261.07	33.48
OTHER	0.82	72,977.13	0.00	72,977.13	0.00
** P L A S T I C **					
CONTAINERS	2.30	204,691.95	1,655.30	206,347.25	0.80
PACKAGING	2.52	224,271.18	0.00	224,271.18	0.00
AFFLIANCES/TOYS	4.45	396,034.43	0.00	396,034.43	0.00
** M E T A L S **					
ALUMINUM CONTAINERS	0.18	16,019.37	11,287.81	27,307.18	41.34
OTHER ALUMINUM	0.59	52,507.93	0.00	52,507.93	0.00
FERROUS CONTAINERS	1.18	105,015.87	16,181.77	121,197.64	13.35
OTHER FERROUS	6.45	574,027.43	508,693.80	1,082,721.23	46.98
NON-FERROUS	0.23	20,469.19	33,953.50	54,422.69	62.39
FURNITURE	1.17	104,125.90	0.00	104,125.90	0.00
RUBBER/LEATHER	0.23	20,469.19	0.00	20,469.19	0.00
TEXTILES	2.34	208,251.81	60.00	208,311.81	0.03
FOOD WASTE	5.86	521,519.49	40,347.80	561,867.29	7.18
TIRES	1.53	136,164.64	5,387.30	141,551.94	3.81
YARD WASTE	16.33	1,453,312.84	408,371.10	1,861,683.94	21.94
CONSTRUCTION/DEMO	22.91	2,038,909.81	796,916.10	2,835,825.92	28.10
MOTOR OIL	1.00	88,996.50	13,480.20	102,476.70	13.15
=====					
	100.00%	8,899,650.00	2,749,344.90	11,648,994.90	23.60%

=====

= COLUMN 1 & 2 FRANKLIN ASSOCIATES NATIONAL COMPOSITION ESTIMATES, 1968; =
 = NY AND NJ EXPORT MARKET REPORT, 1988; VARIOUS COMPOSITE STUDIES =
 = FROM NJ DISTRICTS. =
 = COLUMN 3 DEP SOLID WASTE DISPOSAL REPORTS, 1988. =
 = COLUMN 4 DEP TONNAGE REPORTS, 1988. =
 = COLUMN 5 DEP SOLID WASTE DISPOSAL REPORTS, 1988; DEP TONNAGE REPORTS, 1988. =
 = COLUMN 6 PERCENTAGE EQUALS TONNAGE RECYCLED DIVIDED BY TONNAGE GENERATED. =

WASTE COMPOSITION

(By Weight)



MUNICIPAL SOLID WASTE %:	
- Paper	27.18
- Plastic	9.27
- Metal	8.63
- Food	5.86
- Other	4.45
- Glass	3.55

OTHER %:	
- Yard	16.33
- Construction	23.91
- Tires	.82

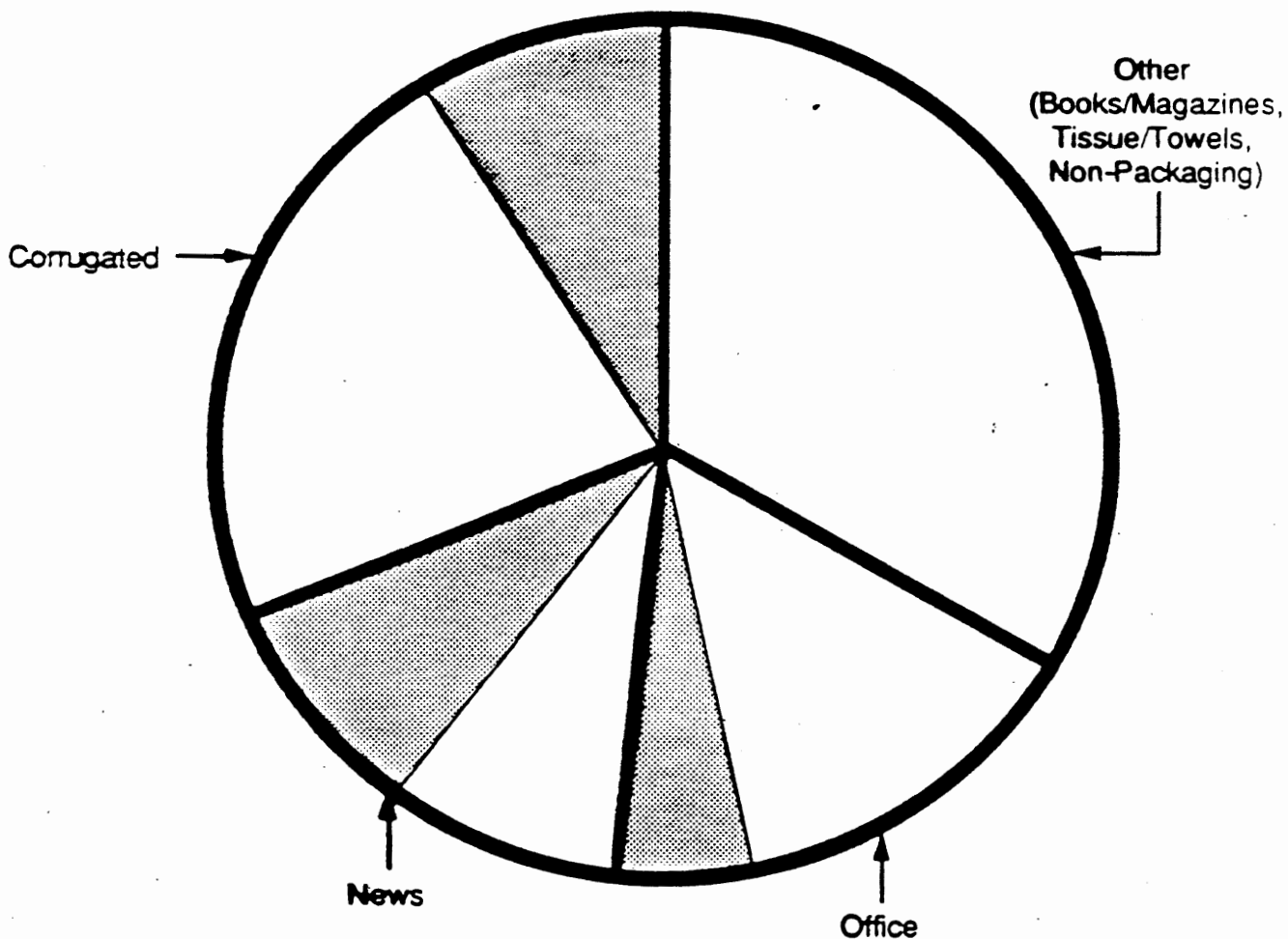
PAPER COMPOSITION

(27.18% Of Waste Stream By Weight)



1988 RECYCLING RATE %:

- CORRUGATED	27.60
- NEWS	46.89
- OFFICE	24.65
- OTHER	0



PAPER COMPOSITION %:

- CORRUGATED	31.79
- NEWS	16.85
- OFFICE	17.40
- OTHER	33.96

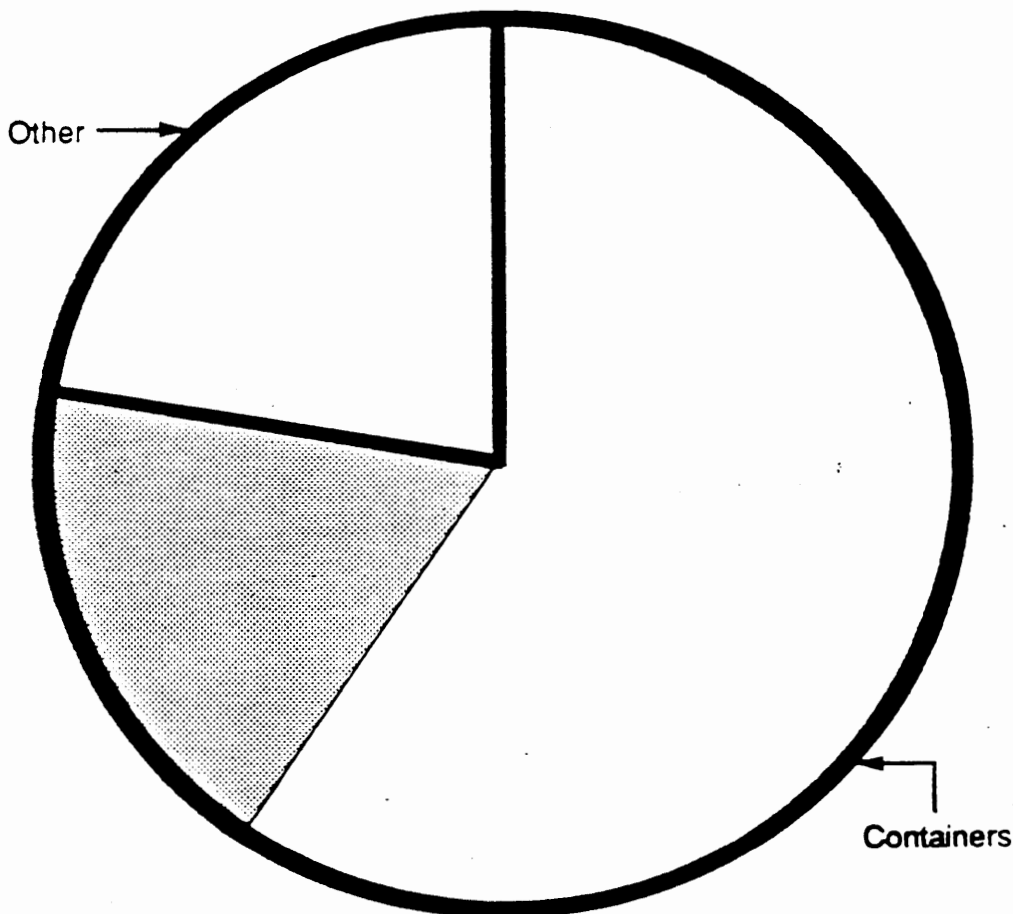
GLASS COMPOSITION

(3.55% Of Waste Stream By Weight)



1988 RECYCLING RATE %:

- CONTAINERS	33.48
- OTHER	0



GLASS COMPOSITION %:

- CONTAINERS	76.90
- OTHER	23.10

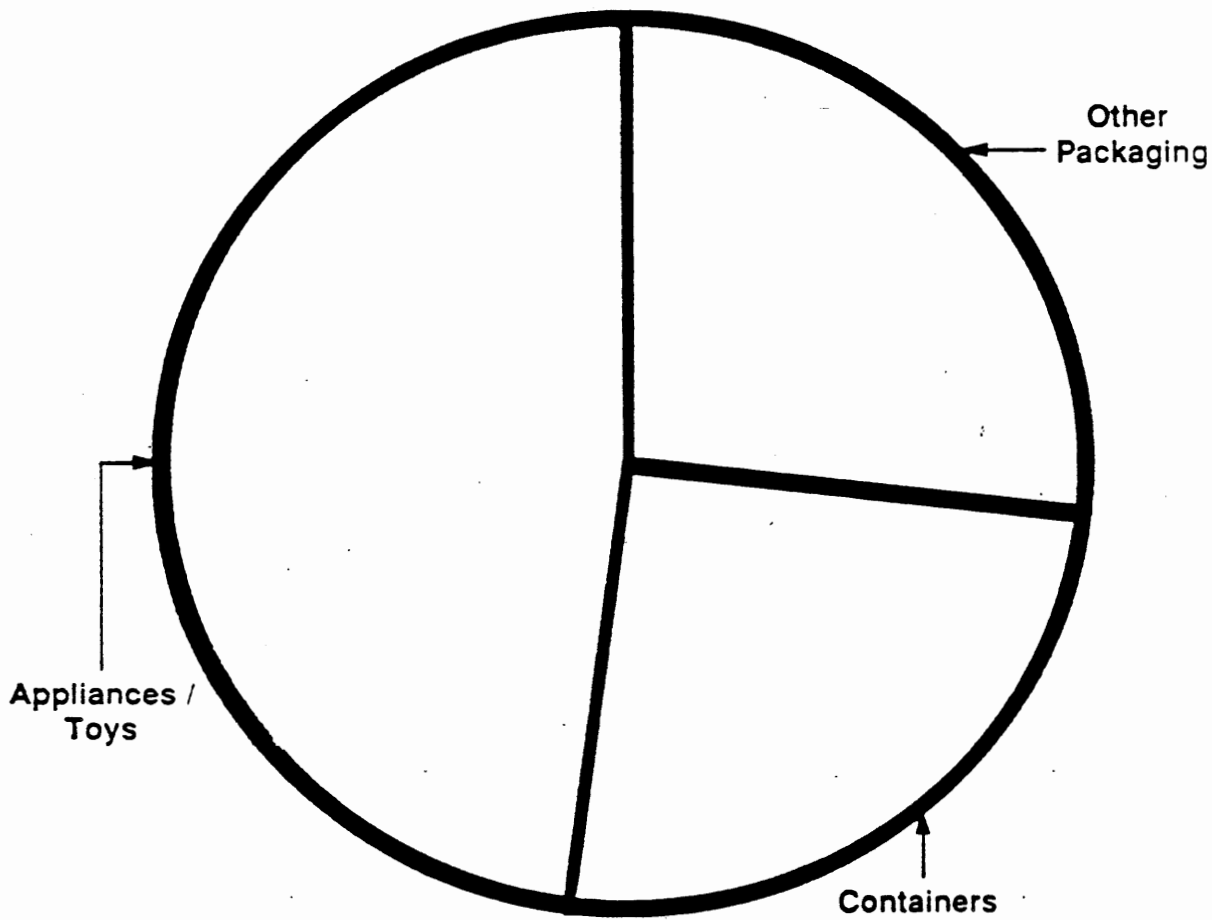
PLASTIC COMPOSITION

(9.27% Of Waste Stream By Weight)

1988 RECYCLING RATE %:



- CONTAINERS	< 1
- OTHER PACKAGING	0
- APPLIANCES/TOYS	0



PLASTIC COMPOSITION %:

- CONTAINERS	24.81
- OTHER PACKAGING	27.19
- APPLIANCES/TOYS	48.00

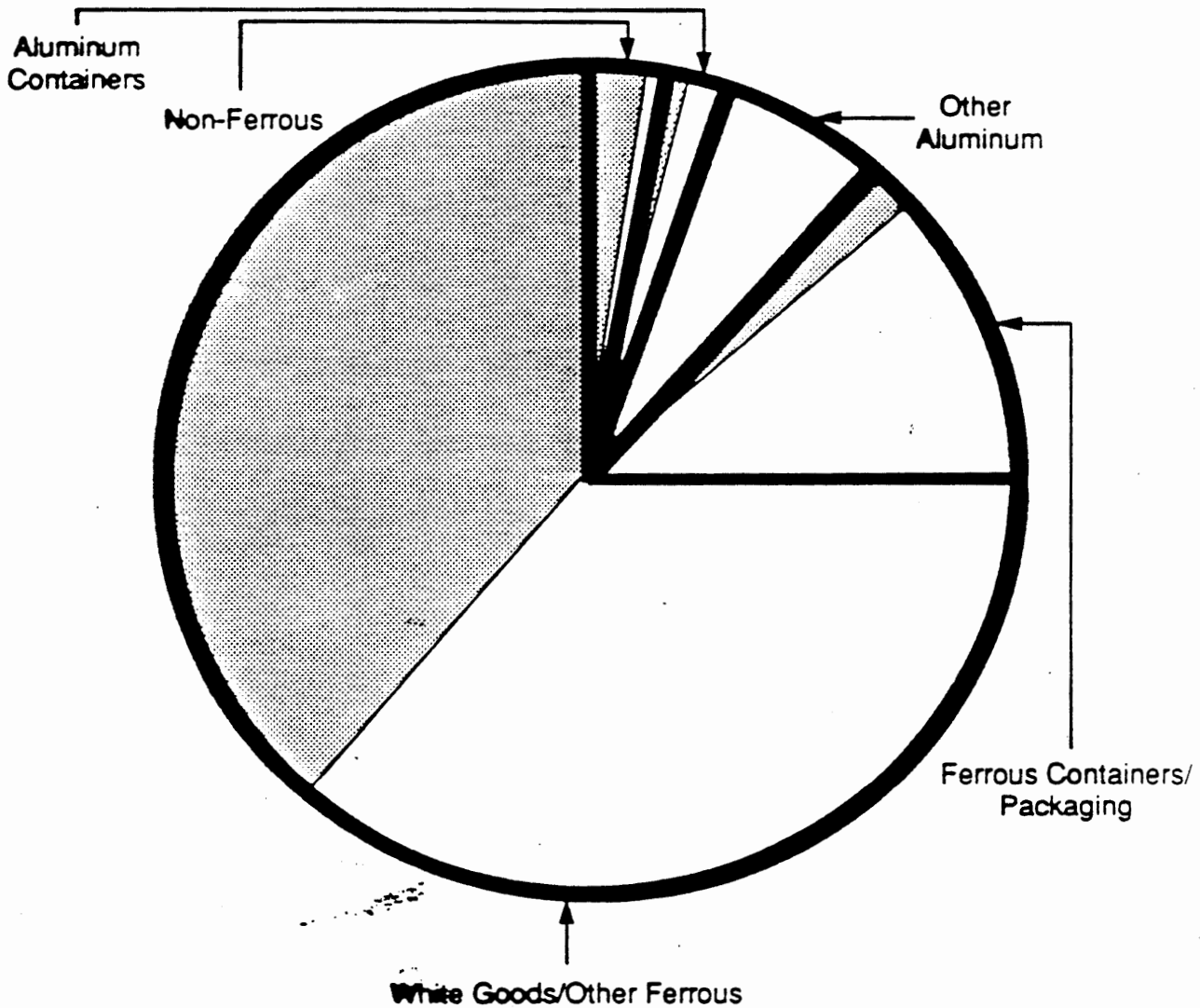
METAL COMPOSITION

(8.63% Of Waste Stream By Weight)



1988 RECYCLING RATE %:

- ALUMINUM CONTAINERS	41.34
- OTHER ALUMINUM	0
- NON-FERROUS	62.39
- OTHER/FERROUS	46.98
- FERROUS CONTAINERS	13.35



METAL COMPOSITION %:

- ALUMINUM CONTAINERS	2.08
- OTHER ALUMINUM	6.84
- NON-FERROUS	2.67
- WHITE GOODS	74.73
- FERROUS CONTAINERS	13.68

9X

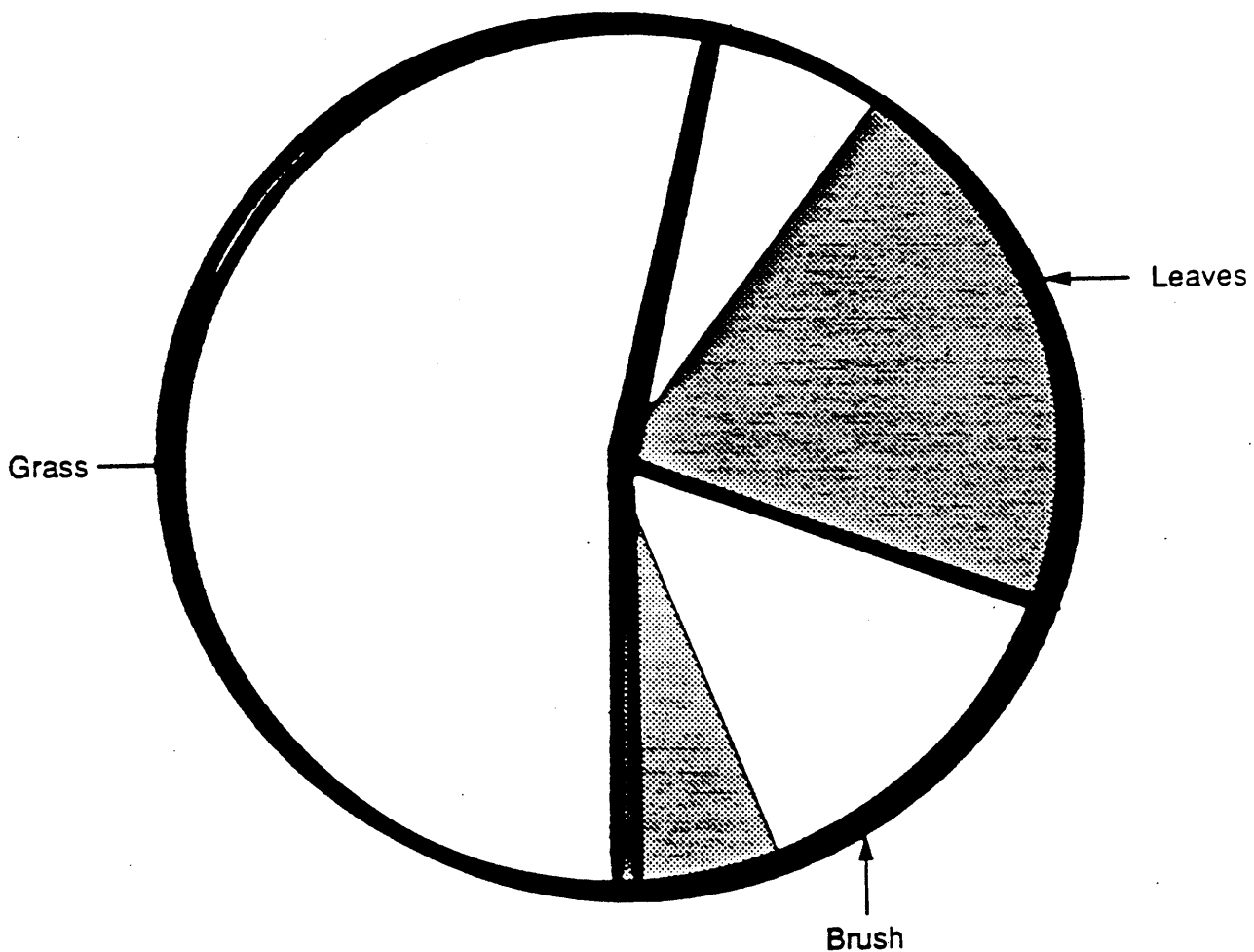
YARD COMPOSITION

(16.33% Of Waste Stream By Weight)



1988 RECYCLING RATE %:

- GRASS	1.36
- BRUSH	33.78
- LEAVES	76.07



YARD COMPOSITION %:

- GRASS	54
- BRUSH	18
- LEAVES	28

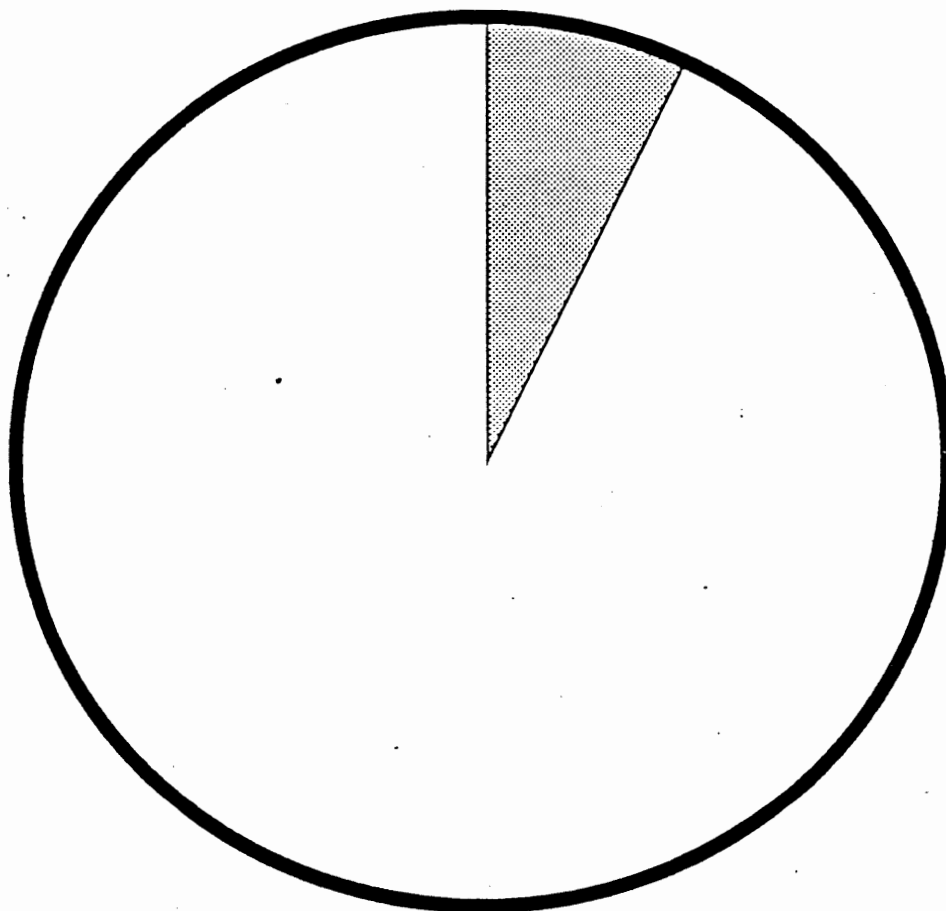
16X

FOOD WASTE

(5.9% Of Waste Stream By Weight)



1988 RECYCLING RATE %:
- RECYCLED 7 %






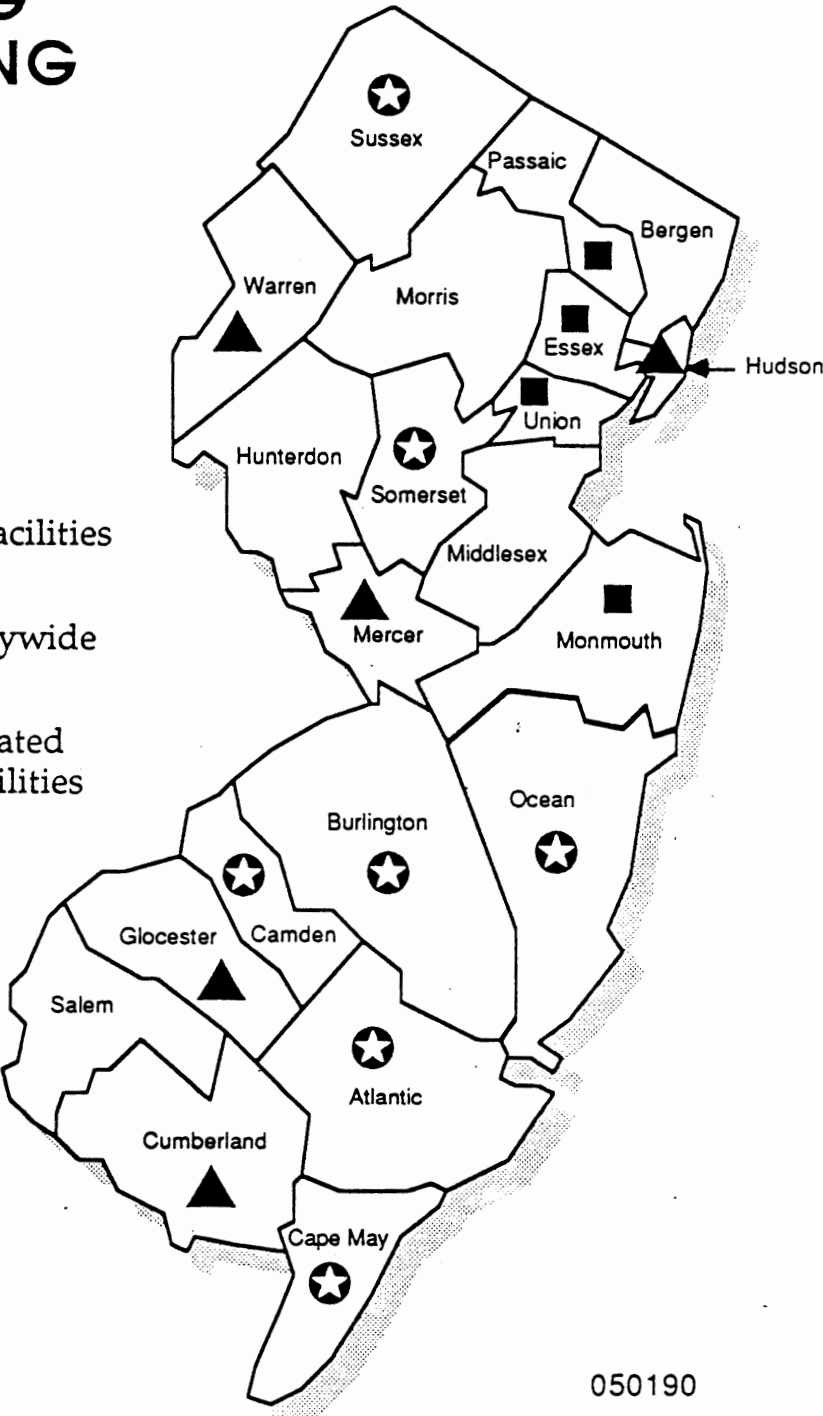
11X

TOTAL RECYCLING RATE

COUNTY	RATE
Atlantic	26%
Bergen	27%
Burlington	14%
Camden	25%
Cape May	16%
Cumberland	37%
Essex	26%
Gloucester	25%
Hudson	21%
Hunterdon	13%
Mercer	38%
Middlesex	22%
Monmouth	17%
Morris	26%
Ocean	36%
Passaic	19%
Salem	11%
Somerset	18%
Sussex	12%
Union	20%
Warren	4.5%

MULTI-MATERIAL RECYCLING PROCESSING FACILITIES

-  Countywide Facilities In Operation
-  Planned Countywide Facilities
-  Privately Operated Processing Facilities



050190

MONMOUTH COUNTY PLANNING BOARD
FREEHOLD • NEW JERSEY

JOSEPH RETTAGLIATA
CHAIRMAN



ROBERT W. CLARK, P.P.
DIRECTOR

May 15, 1990

Mr. John Czapor, Director
NJDEP Division of Solid Waste Management
840 Bear Tavern Road
CN-414
Trenton, New Jersey 08625

RE: RECYCLING INFORMATION PRESENTED TO ASSEMBLY WASTE MANAGEMENT,
PLANNING AND RECYCLING COMMITTEE ON MAY 10, 1990

Dear Mr. Czapor:

I have just had the opportunity to review the recycling information presented to the Assembly Waste Management Committee by the DEP Division of Solid Waste Management on May 10, 1990. Considering the import of this information to current efforts to improve recycling rates in New Jersey, I am distressed at this poorly documented presentation and very worried about how this information could be misused.

Evidently, a major source of information were the "DEP Solid Waste Disposal Reports" prepared from the monthly reports submitted by NJ landfill facilities. It has been the practice to require the submission of these reports on a "cubic yard" basis - even when the landfill had more exact tonnage reports available. Conversions to tons were then made on the basis of 3.33 yards equals one ton. In Monmouth County's case, the converted weight was listed as 846,694 tons in 1986 and 948,750 tons in 1987, but actual tonnage according to the landfill scale records were 711,718 tons and 790,614 tons, respectively. This discrepancy alone would seriously skew the data. Furthermore, there is absolutely no documentation presented for the table titled "Total Recycling Rate" by county. Is this a true "recycling rate" based on all recycling compared to quantities landfilled - or the NJ Office of Recycling "formula" which only permits consideration of "waste type #10" recycling and disposal? Do these percentages come from weight records at the county landfills and transfer stations? After all, it has been publically admitted that much waste was being illegally sent directly out-of-state rather than pay high dumping fees at many of these facilities. Would not a "per capita" recycling rate for each county be the only fair method for comparing one county to another?

If these numbers are, as could be suspected, an estimate by the counties themselves, do they represent recycling recorded by counties or the state at facilities within a county - with no effort made to separate recyclables delivered to the facility, but generated in another county? Can it be shown that each "total recycling rate" was truly calculated using similar data bases? Are these numbers real or just wishful thinking? In Monmouth County, municipalities are required
(continued)

MONMOUTH COUNTY PLANNING BOARD

RE: NJDEP MAY 10, 1990 "RECYCLING INFORMATION"

5/15/90

pg. 2

to submit quarterly tonnage reports based on actual records. Even then, the final annual tonnage reports submitted to the NJ Office of Recycling show total recycling 37% higher than our own county recording system. Monmouth County can document "per capita" recycling by municipality and by material - can other counties do the same? Perhaps our planners should discard an accurate accounting system and develop new estimates. Rather than 17% based on actual documentation, we should note that the quantities delivered to the landfill have declined 34% in the past two years while historic records have demonstrated previous 10% annual increases in tonnage landfilled - we should then claim a 54% recycling rate!

I do apologize for the tone of this communication - most counties are making honest efforts to carefully track recycling efforts with little specific guidance from the Office of Recycling. There are, as yet, no detailed rules for recordkeeping. However, the consequences of accepting dissimilar data for general planning purposes may be very serious. Misleading indicators could discourage efforts by some counties, while setting unrealistic goals or misplaced investment in others (by public agencies or private companies). I recognize the need to present summary information to our legislators and others who do not have the time or opportunity to study detailed reports, but I must demand a better documented and fair accounting. Some of the other states now legislating recycling efforts of 40% or 50% intend to include auto scrap, clean fill materials and even waste reduction estimates in their recycling rates - is New Jersey to play these same "number games"?

It would be most appreciated if the NJDEP Division of Waste Management provided our office with the background documentation for this report. I would also like to recommend that all future reports be based on a "per capita" basis - we must compare "apples to apples." At this juncture, where the Governor's special task force is charged with assessing the proper role of recycling, resource recovery and landfills, proper documentation is more important than ever!

Thank you for your time and attention to this matter.

Respectfully submitted,


Lawrence J. Zaayenga
Solid Waste Coordinator

ATTACHMENTS: NJDEP 5/10/90 "Total Recycling Rate" Chart
Excerpts from 1986/1987 DEP "Waste Disposal Report"
County Reclamation Center Annual Record 1986/1987
"Recycling Fact Sheet" prepared by Monmouth County

cc: NJDEP Commissioner Judith Yaskin
Assembly Waste Management, Planning and Recycling Committee
Monmouth County Board of Chosen Freeholders

LSX

TOTAL RECYCLING RATE

COUNTY	RATE
Atlantic	26%
Bergen	27%
Burlington	14%
Camden	25%
Cape May	16%
Cumberland	37%
Essex	26%
Gloucester	25%
Hudson	21%
Hunterdon	13%
Mercer	38%
Middlesex	22%
Monmouth	17%
Morris	26%
Ocean	36%
Passaic	19%
Salem	11%
Somerset	18%
Sussex	12%
Union	20%
Warren	4.5%

MONMOUTH COUNTY

Facility Number	Facility Name	Waste Type	Total Cubic Yards Year to Date	Reported Cubic Yards This Month	Total Tons Year to Date
336C	Benoit	13	970	110	291
	.615 Green Grove	23	0	0	0
	Tinton Falls Bor	Total	970	110	291
336E	Monmouth County	10	1,643,070	143,247	493,414
	Reclamation	13	1,156,768	89,627	347,378
	Asbury Ave	23	30	0	9
	Tinton Falls Boro	25	5,864	574	1,761
		27	13,758	1,538	4,132
		Total		2,819,490	234,986
352A	Lertch	13	3,870		1,162
	Wycoff Rd & Belmar Blvd	Total	3,870		1,162
	Wall Twp				
3	Monmouth	10	1,643,070	143,247	493,414
		12	0	0	0
		13	1,161,608	89,737	348,831
		23	30	0	9
		25	5,864	574	1,761
		27	13,758	1,538	4,132
MONMOUTH COUNTY TOTAL			2,824,330	235,096	848,147

711,713

NEW JERSEY SOLID WASTE DISPOSAL REPORT : DISTRICT DISPOSAL REPORTS
 (For Year Ending December 31, 1987)

COUNTY WEIGHT SUMMARY
 BY WASTE CLASSIFICATION

County	% of Total	Total	WASTE TYPES						
			10	12	13	23	25	27	Other
Atlantic	4	338,237	214,460	0	116,860	6,131	604	183	0
Bergen	28	2,538,487	1,494,226	0	1,006,432	399	1,368	36,062	0
Burlington	4	396,623	272,576	0	86,254	4,091	3,740	29,961	0
Camden	4	360,305	260,967	0	83,452	1,267	0	14,619	0
Cape May	2	181,528	120,031	0	57,394	1,118	675	2,311	0
Cumberland	2	228,630	209,141	0	9,727	90	528	9,144	0
Essex	0	0	0	0	0	0	0	0	0
Gloucester	2	159,761	137,063	0	14,930	3	1,256	6,510	0
Hudson	10	948,750	418,624	0	513,579	5,612	26	10,909	0
Hunterdon	0	2,327	0	0	0	0	0	2,327	0
Mercer	0	2,093	0	0	853	26	0	1,214	0
Middlesex	26	2,358,297	1,523,543	0	507,490	6,114	9,539	311,611	0
Monmouth	10	946,900	495,285	0	443,010	0	1,398	7,207	0
Morris	0	4,214	2,847	0	0	0	0	1,367	0
Ocean	6	566,207	381,548	2,274	175,844	0	0	6,540	0
Passaic	0	0	0	0	0	0	0	0	0
Salem	1	107,206	34,588	0	11,495	375	0	60,634	113
Somerset	0	9,231	6,494	0	1,144	0	0	1,592	0
Sussex	0	11,586	10,934	0	450	201	0	0	0
Union	0	19,292	10,761	0	7,828	703	0	0	0
Warren	0	113	0	0	23	0	0	90	0
100		9,179,787	5,593,089	2,274	3,036,765	26,131	19,133	502,282	113

18X

MONMOUTH COUNTY RECLAMATION CENTER - DETAILED BREAKDOWN OF WASTE ACCEPTED BY CATEGORY - 1986

(all figures in tons)	<u>JAN.</u>	<u>FEB.</u>	<u>MAR.</u>	<u>APR.</u>	<u>MAY</u>	<u>JUN.</u>	<u>JUL.</u>	<u>AUG.</u>	<u>SEP.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>
Mixed Municipal Waste	23,766.	21,282.	25,174.	27,775	32,087	29,071	31,637	33,282.	31,319	30,205	28,241	30,912
Commercial Refuse	8,525	8,128	9,337	8,606	9,970.	9,685	10,046	9,435	9,978	9,693	8,989	10,002
Bulky and Cleanup	9,634.	7,546	13,485	13,180	18,648	18,201	18,954	17,794	16,951	19,361	15,323	15,001
Leaves and Trees	1,211	1,121	1,807	1,297	1,323	1,373	1,062	1,187	1,430	1,990	1,421	768
Construction & Demo.	5,708.	2,589	4,184	3,132	3,332	4,420	3,216	2,843	3,482	4,332	2,760	2,364
Tires	154	86	77	85	186	125	138	209	127	131	131	183
Other	467	443	969	326	1,043	1,214	1,105	1,220	729	623	715	1,65
<u>Monthly TOTAL</u>	49,465	41,195	55,033	54,401	66,589.	64,089	66,158	65,970	64,016	66,335	57,580	60,887
Quantity SHREDDED	7,960	7,240	8,500	5,000	7,350	7,820	7,740	6,640	4,200	5,850	5,100	6,125
# of VEHICLES	9,617	7,737	10,686	10,049	12,696	12,016	11,833	11,473	11,656	12,330	9,526	10,609

ANNUAL QUANTITIES ACCEPTED BY CATEGORY (1986)

Mixed Municipal Refuse	344,751 tons
Commercial Refuse	112,394 tons
Bulky and Cleanup	184,078 tons
Leaves and Trees	15,990 tons
Construction & Demo.	42,362 tons
Tires	1,632 tons
Other	10,511 tons
+	

TOTALED 711,718 tons
 Amount Shredded 79,525 tons

Notes: (1) substantial proportion of "leaves and trees" consists of stumps and dirt removed in land clearing
 (2) generally only waste classified as "municipal" or "commercial" is felt suitable for shredding

* number of vehicle trips to landfill = 130,228

Source for monthly tonnage and vehicle counts: Monmouth County Data Processing "Daily Usage Summary Report"
 Source for estimates of quantity shredded: Superintendent Gray, Monmouth County Reclamation Center

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MONMOUTH COUNTY RECLAMATION CENTER - DETAILED BREAKDOWN OF WASTE ACCEPTED BY CATEGORY - 1987

(all figures in tons)	<u>JAN.</u>	<u>FEB.</u>	<u>MAR.</u>	<u>APR.</u>	<u>MAY</u>	<u>JUN.</u>	<u>JUL.</u>	<u>AUG.</u>	<u>SEP.</u>	<u>OCT.</u>	<u>NOV.</u>	<u>DEC.</u>
Mixed Municipal Waste	25,250	22,445	28,664	29,445	33,692	35,061	35,374	34,149	33,259	24,926	22,201	23,759
Commercial Refuse	8,865	8,420	10,456	10,702	10,198	11,117	10,707	10,351	10,120	10,031	8,815	9,586
Bulky and Cleanup	11,480	10,670	21,456	24,855	23,764	25,776	22,226	16,104	14,873	13,583	11,125	10,118
Leaves and Trees	741	452	1,405	2,373	1,604	1,972	1,356	3,356	2,593	2,163	1,281	1,496
Construction & Demo.	1,926	2,612	3,626	4,656	3,090	3,759	4,162	9,318	9,281	11,053	10,166	10,963
Tires	107	82	155	179	149	132	136	143	145	200	136	134
Other	783	959	546	9,538	1,851	2,093	972	894	850	1,227	2,052	4,124
<u>Monthly TOTAL</u>	49,152	45,640	66,308	75,748	74,348	79,910	74,933	74,315	71,121	63,183	55,776	60,180
Quantity SHREDDED	3,040	4,800	6,520	6,640	**	**	**	**	**	**	**	**
# of VEHICLES	8,766	8,562	12,735	13,498	13,563	14,436	13,726	13,409	12,706	12,540	10,879	11,013

ANNUAL QUANTITIES ACCEPTED BY CATEGORY (1987)

Mixed Municipal Refuse	348,225 tons
Commercial Refuse	119,368 tons
Bulky and Cleanup	206,030 tons
Leaves and Trees	20,792 tons
Construction & Demo.	74,612 tons
Tires	1,698 tons
Other	19,889 tons
	<u>+</u>

TOTALED 790,614 tons
 Amount Shredded 21,000 tons

Notes: (1) substantial proportion of "leaves and trees" consists of stumps and dirt removed in land clearing
 (2) generally only waste classified as "municipal" or "commercial" is felt suitable for shredding

TOTAL VEHICLE TRIPS TO LANDFILL = 145,833

** note: Both existing shredders (installed 1976) taken out of service to retrofit higher capacity models (on-line early/mid 1988)

Source for monthly tonnage and vehicle counts: Monmouth County Data Processing "Daily Usage Summary Report"
 Source for estimates of quantity shredded: Superintendent Gray, Monmouth County Reclamation Center

20x



IT ALL ADDS UP. . . In 1989, the people of Monmouth County recycled 147,500 tons of valuable resources. This represents a savings of . . .

- ... 1,100,000 trees
- ... enough aluminum to make 60 million new beverage cans
- ... enough glass to make one million new 16 oz. bottles
- ... enough steel to make 4,000 automobiles
- ... enough energy to supply every home in Monmouth County with electricity for 1.5 months
- ... a quarter of a million cubic yards of landfill space
- ... \$10,500,000 in landfill disposal fees
- ... and thousands of tons of air and water pollutants that would have been generated to make products from new materials.

These 147,500 tons of materials which you helped recycle represent only those weights reported to the county. It is felt that considerably more was actually recycled but not reported. The breakdown of tonnage by material is as follows:

Newspaper	38,000 tons	Cardboard	21,000 tons
Glass	22,000	Paper	4,500
Aluminum	1,000	Plastics	85
Tin cans	2,000	Metal scrap	2,500
Organics	41,015	Other	15,400
(leaves, grass and wood waste)			

Thank you for recycling. YOU DO MAKE A DIFFERENCE.

Prepared by the Recycling Office of the Monmouth County Department of Planning, Hall of Records Annex, Box 1255 Freehold, N.J. 07728 Telephone (201) 431-7460

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WHAT MUST BE RECYCLED?

In Monmouth County EVERYONE must recycle



- ... Newspapers
- ... Glass bottles and jars
- ... Aluminum beverage cans
- ... Tin food and beverage cans
- ... Leaves
- ... Used motor oil

In addition, commercial businesses and institutions must recycle

- ... Corrugated cardboard
- ... White office paper

Also banned from the landfill

- ... Concrete
- ... Asphalt
- ... Tree stumps, large tree parts

Other materials being recycled include

- ... Plastics - about six towns have programs, more plan to begin later this year
- ... Paper - magazines and mixed grades included in many commercial, school and municipal programs
- ... Asphalt shingles
- ... Tires
- ... Grass
- ... Wood waste
- ... Metal scrap
- ... Batteries
- ... Food waste

HAS IT MADE A DIFFERENCE AT THE LANDFILL?

Solid waste disposed at the landfill had been increasing by 10% annually due to increased construction and population. After recycling became mandatory in October, 1987 the figures dropped dramatically.

1987	790,614 tons of material landfilled
1988	683,779 tons
1989	586,708 tons

QUESTIONS? NEED INFORMATION?

Contact your municipal recycling coordinator at your town hall for information about your local program
 Contact Monmouth County Department of Planning at 431-7460 for information specific to the County program

MONMOUTH COUNTY FACT SHEET
SOLID WASTE MANAGEMENT PROGRAM



Monmouth County has met all requirements of the "NJ Solid Waste Management Act" and the "NJ Source Separation and Recycling Act."

1. MONMOUTH COUNTY RECLAMATION CENTER/LANDFILL (Tinton Falls)

- * Opened October 1976 - initially handled 250 tons daily, only active landfill in county since November 1983 - now handles 2,000 tons/day
- * Unique Feature - shredding for volume reduction (in conjunction with heavy compaction permits 1200 pounds+ to be placed in a cubic yard)
- * Incoming waste fills 10 acres/year to depths of over 90 feet
- * Summer usage of landfill from 20% to 40% higher (tourist season)
- * Monmouth County handles its own waste - no import or export
- * Dumping fees cover all capital and operating expenses - no county tax dollars used. Fees of \$68 - \$95/ton pays for expansion and all required environmental and operational improvements.
- * Existing facility covers over 300 acres; more property being acquired (50 acres Phase I landfill closed in February, 1983) (100 acres Phase II landfill should last through December, 1991) (other acreage includes scale house, shredding buildings with its enclosed tipping floor, sediment control ponds, leachate collection and treatment system, maintenance/construction areas)
- * New shredders to eventually process 70% of incoming waste; remaining 30% bulky items sent directly to landfill areas
- * County continues to buy additional acreage, of which about 115 acres appears suitable for new landfill space
- * Mandatory recycling program has reduced monthly tonnage handled from previous 50,000-75,000 tons to current 35,000-55,000 tons per month

2. MONMOUTH COUNTY MANDATORY RECYCLING PROGRAM

- * October 1987 - Leaves banned from landfill. Residents required to recycle newspapers, glass bottles, aluminum cans.
- * April 1988 - Tin cans added to recycling mandate. Requirements are extended to all non-residential establishments, which are also required to recycle corrugated cardboard and white office paper (computer/photocopy/stationery).
- * October 1988 - Concrete, asphalt, tree stumps and large tree parts also banned from landfill.
- * During 1989, County's 53 municipalities (with population of 553,000+) reported recycling 12,400 tons/month (45 pounds/person/month). There is an estimated 2,000 to 4,000 tons/month unreported. Quantities accepted at landfill for disposal down 35%. Over Monmouth County recycling rate exceeds 25% (State mandates 25% recycling rate, not counting organic waste and bulky scrap).
- * Timing and design of recycling program discussed with the local haulers and recycling markets to enable smooth startup. Initial plan was modified to recognize municipal comments and market realities.
- * Municipalities responsible for operating local recycling collection programs; the County provides technical assistance, market information and registration, and holds frequent workshops.
- * Many new private companies and jobs have been created to serve the growing municipal and commercial demand for recycling services.

(continued on reverse)

* Countywide recycling averages (1989 - significant seasonal variation)

Paper (newsprint/cardboard/office paper)	20 pounds/person/month
Bottles & Cans (food & beverage containers)	8 pounds/person/month
Organics (leaves/tree parts/some grass)	12 pounds/person/month
Other (asphalt/concrete/masonry)	5 pounds/person/month

- * Approximately 20 municipal compost sites and 15 farms handle leaves; one private site in Freehold Township handles leaves & grass clippings.
- * County operates regional leaf compost site in Freehold Township for use by towns or local residents (charge of \$5/\$6 per cubic yard).
- * County enforces recycling rules at landfill and is prepared to serve as "emergency market" if existing markets/processors have major problems.

3. MONMOUTH COUNTY RESOURCE RECOVERY DEVELOPMENT PROGRAM

- * November 1986 - County Board of Freeholders selected facility site in Tinton Falls adjacent to existing landfill/shredding facility
- * July 1988 - after year-long study of alternatives and numerous public hearings, "LOW TECHNOLOGY MATERIAL RECOVERY FOLLOWED BY INCINERATION" selected as favored technology (front-end process using trommels, screens, magnets and hand sorting to remove more recyclable material and hazardous items prior to incineration & energy recovery)
- * Four season waste composition/quantity study finalized size of the facility at 1700 tons per day - from 5% to 10% of incoming waste will be removed in front-end (PET/HDPE/film plastics, ferrous and non-ferrous metals, plus corrugated cardboard - system will be flexible).
- * Size chosen to handle all processible waste during first ten years of operation - anticipate some "bypass" waste during years ten-twenty of operation (facility may have useful life of thirty+ years).
- * Preliminary Environmental Health and Impact Statement (PEHIS) was completed July 1989; Final EHIS and permit application October 1990.
- * Over year to review formal proposals by vendors to build and operate facility - Westinghouse chosen March 1990 for final negotiations.
- * Construction to begin April 1992; Facility operational December 1994.
- * Integrated system of recycling, resource recovery and landfill should insure adequate disposal capacity for Monmouth County past year 2020.

4. MONMOUTH COUNTY HOUSEHOLD HAZARDOUS WASTE DISPOSAL PROGRAM

- * County hires special hazardous waste contractor to pack and properly dispose of pesticides, toxic household and auto products at four scheduled "Disposal Days" held each year. Handled up to 25 tons per event in 1989. Waste oil and household/auto batteries also accepted and recycled by County. Held at several sites throughout county.
- * Special site at Reclamation Center open to accept waste oil and any batteries second Saturday of each month. Program to locate container for used household batteries in stores and public buildings should be in place by summer of 1990 - batteries a major source of toxic metals
- * Work underway to make HHW program more convenient for residents.

5. OTHER MONMOUTH COUNTY SOLID WASTE MANAGEMENT ACTIVITIES

- * Special "Solid Waste Enforcement Team" inspects waste sites and all recycling facilities; enforces dumping/recycling rules at landfill.
- * Updated "Waste Sites Map" to be released this summer will locate all former landfills and illegal dumps; another map shows all scrapyards.
- * County offers special educational programs for schools

WASTE GENERATION FOR MONMOUTH COUNTY - HISTORICAL FIGURES 1986 TO 1989

prepared by County Dept.
of Planning from earlier
reports 5/8/90 l j z

YEAR	TOTAL WASTE (TONS)	=	LANDFILLED + RECYCLED WASTE	WASTE PROCESSIBLE BY COUNTY RR FACILITY	NON-PROCESSIBLE WASTE
1986	780,668 tons	=	711,718 + 68,950 tons (9%)	485,579 tons	226,139 tons
1987	890,846 tons	=	790,614 + 100,232 tons (11%)	503,577 tons	287,037 tons
1988	842,805 tons	=	683,779 + 159,026 tons (19%)	436,402 tons	247,377 tons
1989	770,727 tons	=	568,708 + 202,019 tons (26%)	420,456 tons	148,252 tons

- Notes: 1. Total Waste = Landfilled Waste (MCRC Records) + Recycled Waste (NJOR Records 1986-1988)
(Recycled Waste includes all types recycled, not just "waste type #10") (1989 figure based on Monmouth County records - County recorded only 73% of final tonnage reported to State in 1988)
2. "Processible Waste" = Type #10 Waste Disposed at Landfill + 12% of Other Categories
3. Recycling recordkeeping has been improving. However, "recycled waste" figures show only the reported recycling - actual figures are higher.

ESTIMATED WASTE GENERATION FOR MONMOUTH COUNTY - FIRST FULL YEAR RR FACILITY OPERATION

25X

YEAR	TOTAL WASTE (TONS)	=	LANDFILLED WASTE + RECYCLED WASTE + WASTE DIRECTED TO RR FACILITY
1995	864,000 tons (100%)	=	154,000 tons (17.9%) + 250,000 tons (28.9%) + 460,000 tons (53.2%)

- Notes: 1. "Non-Processible" Waste is that sent to landfill (17.9%)
2. "Processible" Waste is that recycled or sent to RR Facility (82.1%)
3. Planned Monmouth County Resource Recovery Facility includes a front-end processing system for recovery of 5-10% of the material from the "Waste Directed to RR Facility"
4. TOTAL WASTE tonnage is conservative (underestimated), based upon an overall decline in per capita waste generation - therefore, actual figures landfilled, recycled and directed to RR Facility may be somewhat higher. Monmouth County staff and consultants are currently working on better waste generation figures, using new population estimates and other refinements.
5. Although overall waste quantities and landfilled waste declined in 1988-1989, an increase in the quantity (and proportion) of "waste type #10" has been observed.

*** THESE ESTIMATES ARE ONLY DRAFT AND PRELIMINARY NUMBERS - A refined waste generation model is being developed.

*** THE MONMOUTH COUNTY RESOURCE RECOVERY FACILITY IS BEING DESIGNED TO HANDLE WEEKLY AND SEASONAL PEAK LOADINGS OVER 20% HIGHER THAN DAILY AVERAGE WASTE DELIVERIES. ANNUAL TONNAGE HANDLED WILL INCREASE WITH POPULATION.

Common Plastics Used in Consumer Packaging

1. LDPE - Low Density Polyethylene

Characteristics:

- Flexible
- Translucent to waxy in appearance
- Opaque coloring is possible
- Commonly used for films; also used for bottles.

Example: Bread wrap, Glue bottle

2. HDPE - High Density Polyethylene

Characteristics:

- Moderately flexible to stiff
- Translucent
- Opaque coloring is possible
- Commonly used for shampoos, detergents & cleaning solutions.

Example: Milk Bottle, White Rain Shampoo Bottle

3. PVC - Polyvinyl Chloride

Characteristics:

- Stiff
- Transparent with a slightly blue or grey tint

Example: Baby Oil Bottle

4. PET - Polyethylene Terephthalate

Characteristics:

- Stiff
- Transparent
- Bottles cannot be manufactured with handles.

Example: Soda Bottle

5. PS - Polystyrene

Characteristics:

- Hard and brittle
- Crystal clear with a brilliant surface finish (glass-like)
- May be "foamed"

Example: Clear plastic cups, "Styrofoam" cups



PLASTICS RECYCLING CENTER

PISCATAWAY, NEW JERSEY

STANDARDS AND SPECIFICATIONS

WHAT WILL WE ACCEPT FOR RECYCLING?

- **PET BOTTLES** - CLEAR AND GREEN COLORS, SODA AND LIQUOR BOTTLES
- **HDPE BOTTLES** - MILK AND JUICE BOTTLES
- **HDPE RIGID BOTTLES** - LAUNDRY, DETERGENT AND CLEANING BOTTLES

WHEN CAN COLLECTION PROGRAMS BEGIN?

- **IMMEDIATELY.** WE ARE ACCEPTING BALES OF THE ABOVE MATERIALS NOW.

CONTRACTS?

- **YES.** WE WILL ALSO BE ACCEPTING POLYETHYLENE WRAP SUCH AS TRASH, LAWN, GROCERY AND MERCHANDISE BAGS.

BUT FIRST, WE ARE GOING TO CONCENTRATE ON THE BOTTLES. THEN WE'LL START ADDING OTHER RECYCLABLE PLASTICS.

WHAT ARE THE QUALITY STANDARDS?

- **PLASTIC ONLY.**
- **CAPS, CLOSURES AND LABELS ARE OK.**
- **PLEASE WASH ALL CONTAINERS BEFORE RECYCLING THEM. THESE CONTAINERS MAY ATTRACT BEES THAT CAN BE DANGEROUS TO SOME PEOPLE.**
- **BALES MUST NOT CONTAIN:**

DIRT
GLASS
METAL
ALUMINUM
STONES OR ROCKS
STYROFOAM MEAT OR FOOD CONTAINERS

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC • POLYOLEFINS DIVISION



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PLASTICS RECYCLING CENTER

FILM SPECIFICATIONS

THE FOLLOWING ARE BRIEF DESCRIPTIONS OF THE POLYETHYLENE FILM GRADES THAT UNION CARBIDE PLASTICS RECYCLING CENTER IS TAKING.

- 0 **PALLET WRAPS**
 - SHRINK - THIN FILM THAT IS LIKE THE OFFICE TRASH CAN LINERS.
 - STRETCH - FEELS TACKY TO THE TOUCH

- 0 **BAGS, RETAIL**
 - GROCERY - T-SHIRT CARRY-OUT
 - PRODUCE - THIN BAGS FROM THE PRODUCE DEPARTMENTS
 - MERCHANDISE - THICKER HEAVY MERCHANDISE BAGS SUCH AS DEPARTMENT STORE BAGS OR THIN CRINKLEY SOUNDING BAGS SUCH AS CD STORES USE

- 0 **BAGS, COMMERCIAL OR HOME USE**
 - OFFICE BUILDING TRASH CAN LINERS
 - BAGS FROM SODA/POP BOTTLES RETURNED FOR RECYCLING IN BOTTLE BILL STATES

- 0 **SINGLE LAYER POLYETHYLENE FILM**
 - FURNITURE AND RUGS COME WRAPPED IN HEAVY SINGLE LAYER FILM
 - BOATS ARE OFTEN WRAPPED IN POLYETHYLENE AT MARINAS FOR DRY-DOCKING

UNION CARBIDE CHEMICALS AND PLASTICS COMPANY INC • POLYOLEFINS DIVISION



1 River Road, Piscataway, NJ 08854 Telephone: (201) 563-6080
28X

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**THE INCREMENTAL COSTS OF
ADDING PLASTIC BOTTLES TO
CURBSIDE RECYCLING IN NEW JERSEY:
FIVE CASE STUDIES**

Prepared for

The Plastic Recycling Corporation of New Jersey

November 1, 1989

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30X

OBJECTIVES FOR THE STUDY

- This report is intended to provide helpful information to cities and towns in New Jersey and State and county officials who are interested in the economic feasibility of adding plastics to existing curbside recycling programs.
- This study develops emperical, documented information which depicts the actual economic impact in representative New Jersey communities as a result of the addition of plastic beverage containers to their programs.
- This document focuses only on the incremental costs and benefits of adding PET and HDPE plastic bottles to existing curbside recycling programs in New Jersey. The emphasis is important:
 - Only incremental costs and benefits are reported: how much more did communities actually have to spend, over and above their prior spending, in order to add PET and HDPE to their curbside programs? And how much more did the communities save in landfill and other costs?
 - Adding plastic bottles to existing programs is the focus because the vast majority of New Jersey communities instituted curbside programs without including plastics.

3/X

SCOPE AND METHODOLOGY OF THE ANALYSIS

- The methodology used in this report is a set of 5 case studies of communities which have added PET and HDPE plastic bottles to established recycling operations. These communities were chosen to represent a range of programs, approaches and costs. These ranges cover:
 - Size -- from Berlin Township, population 5,576, to Sayreville, population 34,310, and a portion of the city of Trenton
 - Collection area -- from 1,800 to 10,000 households
 - Frequency of collection -- from twice per month to four times per month
 - Method of collection -- materials commingled or source separated
 - Scrap value of plastics returned to the community -- from \$0 to \$150 per ton
 - Landfill tipping fees -- from \$50 to \$98 per ton, and \$14.46 per cubic yard in one case

- Data on the community programs was obtained through a series of site visits and interviews with recycling coordinators from the 5 communities. Case study conclusions were subsequently reviewed with recycling coordinators to ensure accuracy.

- The cost analysis is an incremental cost study, not an allocation of pre-existing costs. It identifies discrete expenses incurred from the addition of plastic bottles, calculates income from amount received from the state tonnage grant based on most current figures, calculates the amount saved in tipping fees from removing plastic bottles from the waste stream and reconciles expense and income figures for a net cost or benefit of adding plastics to the curbside recycling program.

BACKGROUND ON MATERIALS RECYCLING IN NEW JERSEY

- In 1987 Governor Kean signed the New Jersey Statewide Source Separation And Recycling Act (P.L. 1987, c. 102) mandating recycling of materials and requiring that:
 - By 1989, each municipality must recycle at least 15% and by 1990 at least 25% of the prior year's total municipal solid waste stream by weight.
 - By 1989, counties must designate recycling coordinators and adopt recycling plans designating leaves and at least 3 other recyclable materials for collection and recycling.
 - By October, 1988, DEP would report on the progress of plastics recycling, and submit recommendations for improvement if plastic recycling levels are below those of glass and aluminum containers.
 - The state would distribute \$7.8 million to towns and municipalities to assist in the development of recycling programs as a one time lump sum assistance grant. Funds were distributed during 1987.

- New Jersey has been encouraging recycling of materials through the tonnage grant program since 1982.
 - From 1982 to 1987, more than 80% of municipalities have received tonnage grants.
 - For 1987, the most recent year tonnage grant disbursements have been made, municipalities received \$4.06 per ton for materials recycled, for a total statewide of \$4.6 million.

- As of July 1989, 66% or 377 of the 567 municipalities in New Jersey collect recyclable materials at the curbside.

33X

PLASTIC BOTTLE RECYCLING IN NEW JERSEY

- As of July 1989, 16% or 89 of the 567 of New Jersey municipalities collect plastic bottles at the curbside as part of a residential recycling program.
- Plastic bottle recycling in New Jersey has increased dramatically in the past three years and continues to grow rapidly.
 - In 1986, only a handful of municipalities recycled a total of 6.6 tons of PET and HDPE plastic bottles.
 - In 1987, New Jersey municipalities recycled a total of 193 tons of PET and HDPE plastic bottles, an increase of nearly 3000% over 1986 levels.
 - In 1989, New Jersey municipalities will recycle 1,075 tons of PET plastic bottles alone, based on levels of recycling during the first six months of 1989.
 - The five communities in this case study will recycle a total of 208 tons of PET and 157 tons of HDPE plastic bottles in 1989, based on levels of recycling during the first six months of 1989.
- Markets currently exist to accept virtually all of the plastic bottles which New Jersey municipalities could collect.
 - Demand for recycled PET and HDPE bottles will increase further as major plastics manufacturers open more plastic bottle reprocessing facilities, requiring a higher volume of feedstock plastic bottles.

34X

OVERALL CONCLUSIONS OF THE STUDY

- It appears that many small and mid-sized New Jersey communities with existing curbside recycling programs could add PET and HDPE plastic bottles to their programs and have a net cost benefit starting in their first year
 - All five of the case study municipalities show benefits larger than incremental costs
 - A key factor was finding ways (especially commingling) to add plastics that did not require
 - Hiring additional staff
 - Acquiring additional vehicles
 - Acquiring additional curbside containers and recycling equipment
 - Market factors for recycled plastic were not critical; the primary savings came from avoided landfill costs
- In most of the case study programs, the largest benefit came from landfill cost savings:
 - An exception is Trenton's program which separates, bales and markets its own recyclables
 - Total dollar benefits from adding plastic bottles vary because of differences in costs due to the method of recycling (commingled vs. separated) and the scrap value of plastic bottles returned to the community (in 1989 only Trenton marketed its plastic directly and received payment for the value of the materials).

35X

	<u>Incremental Cost</u>	<u>Incremental Benefit</u>	<u>Net Benefit</u>
Sayreville	\$3,306	\$10,701	\$7,395
Berlin Township	5,616	11,508	5,891
Upper Township	300	2,919	2,619
Trenton	7,202	10,452	3,250
Paramus	0	21,292	21,292

CONCLUSIONS OF THE FIVE TOWN CASE STUDIES

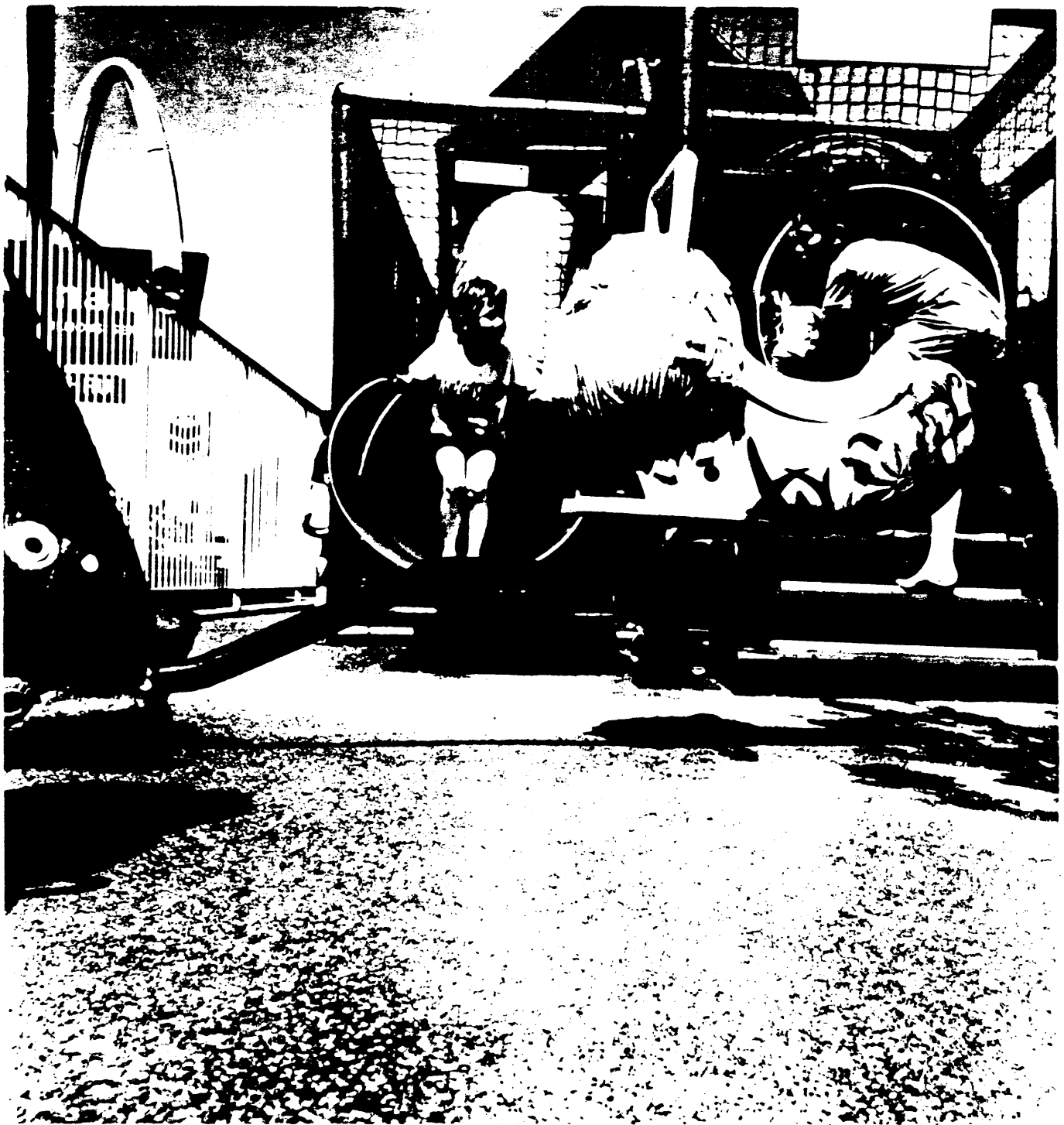
- No significant outlays for new equipment were necessary by most of the communities themselves to include plastics in the community pickup.
 - Excess capacity was available in collection trucks in all cases except Trenton.
 - In Paramus, Berlin and Sayreville, which provided collection containers, excess capacity was available in existing containers, or more containers were purchased than were needed for the original recycling program excluding plastics.
 - In Trenton, one collection vehicle was purchased, with funds donated by Mercer County, allowing the retirement of two aging vehicles of similar total capacity. One baler was leased from Mercer County for nominal cost, replacing a less efficient machine.
- No additional labor was required in four of the five communities. In all cases, no additional laborers were hired.
 - In all communities except Berlin Township sufficient resources existed in the programs that labor was reallocated from other tasks and better use was made of existing labor time.
 - In Berlin Township, time required for completing the collection route increased by 11 hours per week and existing laborers were paid for the additional hours.
- In all five of the communities, excess capacity existed in the recycling programs before plastic bottles were added such that no increase in total workforce or expenditures for new equipment was needed to include plastic bottles in the residential collection program.
- Money saved from avoided landfill costs provided the greatest incentive and the largest single benefit to the five communities, outweighing the additional costs born by the communities for adding plastic bottles.
 - In each community, costs for landfilling waste are expected to increase 50 to 100 percent within the next two years, so the savings from recycling plastics will increase even further

36 X

CONCLUSIONS OF THE FIVE TOWN CASE STUDIES (Contd.)

- Two additional factors contribute to the positive cost benefit ratio observed in the five communities:
 - The recycling programs in each of the communities are relatively new, as is the case with most of the New Jersey programs. As new programs, inefficiencies and excess capacity, both in available labor and in equipment, can be expected as the communities work to find the least complex and most cost effective way to operate residential pickup programs.
 - Each of the 5 communities have well run recycling programs, operated by recycling coordinators skilled at managing recycling programs and committed to making their program work.

37X



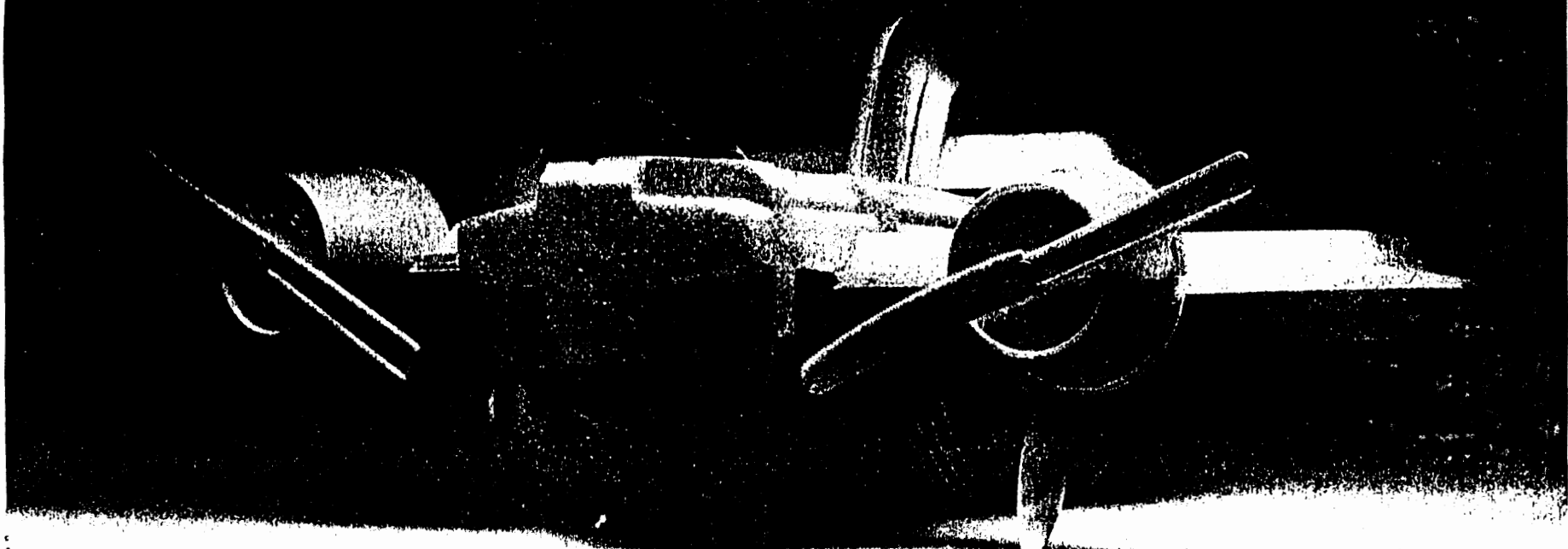
Can you spot the recycled tires in this McDonald's Playland?

These kids are playing on a new soft surface made out of recycled tires. It's called SAF DEK from No Fault, Inc. The McRecycle USA program will make McDonald's restaurants the largest new market in America for recycled products of all kinds.

Pictured: McDonald's Playland
Shelby Drive at Germantown Road
Memphis, Tennessee

38X

They Said Polystyrene Recycling Would Never Fly.



39 X

You can't recycle *polystyrene*, they said. And even if you *could*, it'd cost too much to get it to recycling collection centers, they said. Besides, it's *plastic*, they said, and you know what that means. Yessir, a lot of people had *all* the answers.

And while they were all talking, the polystyrene industry was already beginning to recycle.

First, we developed ways to recycle used polystyrene into high-quality, reprocessed polystyrene pellets. Then, we helped demonstrate that existing products can be made out of those pellets. Long-life products, like building insulation, cassette covers and letter

trays. Finally, we helped set up collection systems at schools and fast-food restaurants—places where a lot of our polystyrene is used.

The fact is, we've overcome many of the barriers to polystyrene recycling. And we're even beginning to prove that polystyrene recycling can become a viable business enterprise.

Of course, *they* are still talking. And we're still working.

Polystyrene recycling isn't available everywhere. Not yet. But by the end of 1990, it will be available in seven major metro areas: Boston,

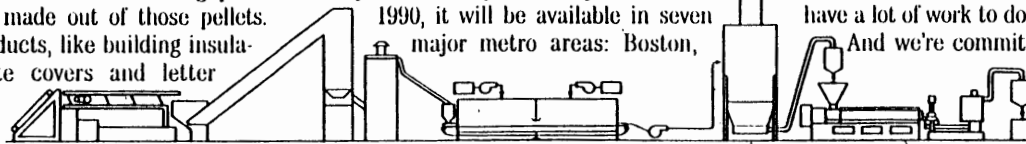
Chicago, Los Angeles, New York, Philadelphia, San Francisco and Portland, Oregon. Facilities are already operating in some of those cities.

By 1995, it's our goal to recycle 250 million pounds of used polystyrene annually, an amount equivalent to 25% of all polystyrene used by the food service and packaging industries—a goal that is consistent with the Environmental Protection Agency's Solid Waste Reduction Plan.

We know we still have a lot of work to do. And we're commit-

ted to doing it. Because we've already done the hardest part. We got polystyrene recycling off the ground, no matter *what* they were saying.

For more information about polystyrene recycling in your area, write to our Washington office: National Polystyrene Recycling Company, P.O. Box 66495, Washington, D.C. 20035-6495.



The polystyrene recycling process used by the NPRC cleans and converts used polystyrene into high quality, reprocessed polystyrene pellets, without hazard to recycling workers or adverse environmental impact.



*We're Making
Recycling Work.
Today.*
National
Polystyrene
Recycling
Company



NEWS RELEASE

McDonald's Corporation • One McDonald's Plaza • Oak Brook, Illinois 60521

FOR RELEASE: APRIL 18, 1990

CONTACT: TERRI CAPATOSTO
McDONALD'S
708-575-6109
OR
JON HOLT
HOLT, ROSS & YULISH
201-287-0045

McDONALD'S TO BECOME LARGEST NEW MARKET FOR RECYCLED MATERIALS

OAK BROOK, ILLINOIS -- McDonald's Corporation today announced the creation of "McRecycle USA", an environmental leadership program which sets an annual goal of purchasing \$100 million worth of recycled materials for use in the construction, remodeling and operations of its U.S. restaurants.

Through this large-scale commitment to recycling and the environment, McDonald's is creating the largest new market for recycled materials in the United States. It represents the corporation's initial goal of having recycled products make up at least 25% of its annual expenditures on materials used to build, remodel and equip its restaurants.

Each year in the USA, approximately 375 new restaurants are built and 1000 are remodeled by McDonald's. The products used in the construction and renovation of McDonald's restaurants range from building insulation and landscape timbers to table tops and waste containers to wallboard and roofing materials--all of which can be made out of recycled materials.

"Recycling is one of the most important environmental steps America can take," stated Ed Rensi, President of McDonald's USA. "But there is an urgent need to expand the market for recycled materials so that individuals, communities and businesses can sustain--and even increase--their recycling efforts."

- more -



RECYCLED PAPER

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Rensi added, "Through 'McRecycle USA', McDonald's is taking action to stimulate the market for recycled products by becoming a major buyer of recycled materials of all kinds. We challenge suppliers to provide us with these recycled products. We are a new \$100 million a year market, waiting to be tapped."

Rensi stressed that McDonald's new \$100 million market for recycled products is in addition to the more than \$60 million that the company already is spending annually on recycled paper products such as napkins, drink carriers, tray liners and Happy Meal containers.

Shelby Yastrow, McDonald's Senior Vice President of Environmental Affairs, noted, "We're the largest user of recycled paper products in the quick service restaurant business. Now we're prepared to use our purchasing power to stimulate demand for a wide range of products made from recycled materials."

To assist producers and suppliers of recycled products, McDonald's has established the McRecycle USA Registry Service. Manufacturers with recycled products to sell McDonald's can call toll-free at 1-800-453-1000 to register. They will receive information by mail regarding the program and how they can qualify to sell their products to McDonald's.

In addition, McDonald's will open the McRecycle USA Information Center this fall at the corporation's home office in Oak Brook, Illinois. Located along with McDonald's test kitchens and training centers, the McRecycle USA Information Center will be the focal point for all of McDonald's recycling efforts.

Suppliers and others will be able to visit the Information Center for help with all their McDonald's recycling opportunities, specifications and information needs.

Last fall, McDonald's implemented an in-store recycling program for polystyrene food packaging in 450 restaurants in New England. Plans are currently underway to expand this program to all 8,200 U.S. McDonald's restaurants as quickly as projected recycling facilities are opened.

McDonald's is the world's leading quick service restaurant organization, serving 22 million people each day in more than 11,000 restaurants in 52 countries. Seventy-five percent of McDonald's restaurant businesses are locally owned and operated by independent entrepreneurs.

#

90/4/12:mcpres

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McRecycle™ USA

McRecycle USA Registry Service
For Suppliers: 1-800-453-1000

Potential Recycled Products for McDonald's® Restaurants

SUPPLIES AND EQUIPMENT

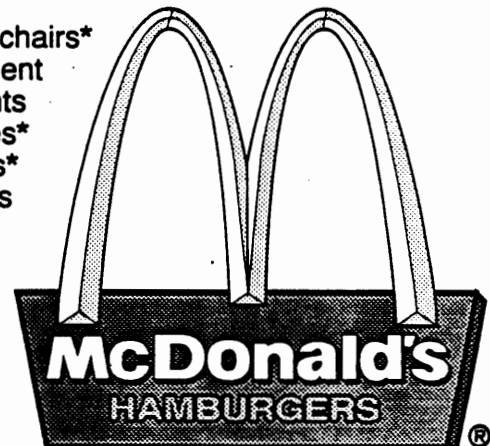
Booster seats
Cloth towels
Doors and panels for grills, fryers, etc.
Drive-thru audio system
(head set, battery pack, battery case)
Highchairs
In-store trays*
Interior/exterior signage
Mop buckets*
Mop handles
Pallets*
Trash can liners
Trash receptacles*
Utility carts

RECYCLED PAPER PRODUCTS ALREADY IN USE

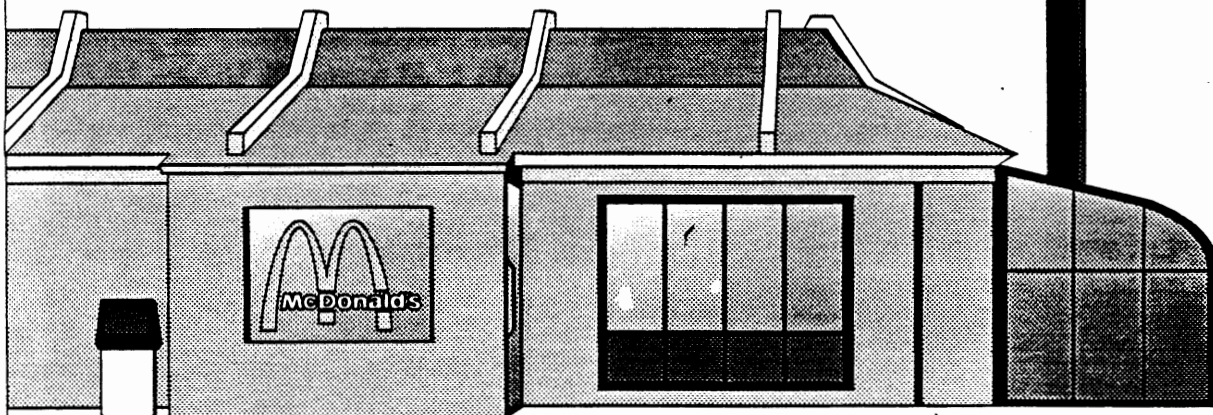
Carry-out drink carriers*
Corrugated boxes*
Happy Meal® cartons*
Napkins*
Toilet tissues*
Tray liners*

CONSTRUCTION & REMODELING

Ceiling and floor tile
Concrete curbing
Conference room chairs
Construction lumber
Decorative siding
Fencing & decking
Interior table tops
Insulation
Landscape edging
Landscape timbers*
Menu board frame
Office chairs and tables
Patio blocks
Patio tables and chairs*
Playland equipment
and components
Playland surfaces*
Restaurant seats*
Roofing materials
Stepping stones
Wallboard
Wheel stops*



* Already in use at some McDonald's restaurants



**McDonald's wants to use \$100 Million of Recycled
Material annually for New and Remodeled Restaurants.**

© 1990 McDonald's Corporation

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THE OFFICIAL

RPC

**RECYCLED
PRODUCTS
GUIDE**

Background

"BUILDING MARKETS FOR RECYCLABLES"

Publisher Robert Boulanger, M. Ed.

THE OFFICIAL RECYCLED PRODUCTS GUIDE (RPC) was established in March, 1989.

The Guide lists a broad range of product information under such classifications as paper, rubber, oil, plastics, construction materials, packaging, landscaping and gardening. Listings in the guide are **free of charge** to manufacturers and distributors of recycled products who certify their recycled content.

Listings include company name, address, contact, telephone, fax, type of company (manufacturer or distributor), minimum recycled content, special remarks. All listings are cross-referenced alphabetically, geographically and by product type. A references section includes such information as current governmental procurement guidelines.

The Official RECYCLED PRODUCTS GUIDE is published by:
American Recycling Market Inc.,
P.O. Box 577, Ogdensburg, NY 13669
HOTLINE: 1-800-267-0707 (USA) (315) 471-0707
FAX: 613/448-2268

OVER

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RECYCLED PRODUCTS INDEX

RPG® PRODUCT CLASSIFICATIONS - AS LISTED IN THE "OFFICIAL" RECYCLED PRODUCTS GUIDE
EFFECTIVE FEBRUARY 1990

CONSTRUCTION MATERIAL PRODUCTS

DRAINAGE-NITRIFICATION FIELD SYSTEMS
DRAINAGE-PRE-FABRICATED SYSTEMS
DRAINAGE-TROUGH & ACCESSORIES
DRAINAGE-UNDERDRAIN UNIT (GLASS)
DRY FELT MATERIAL
EXPANSION JOINT FILLERS
FLY ASH-FOR CONCRETE
FLY ASH-FOR R/M CONCRETE
INSULATION-BLOWING
INSULATION-BOARD
INSULATION-CELLULOSE
INSULATION-CELLULOSE FIBERBOARD
INSULATION-CELLULOSE LOOSE FILL
INSULATION-FIRE PROOFING, SPRAY-ON
INSULATION-MINERAL WOOL
INSULATION-PERLITE BOARD
INSULATION-ROCK WOOL
INSULATION-SPRAY-ON CELLULOSE LOOSE FILL
PIPE-CORRUGATED DRAIN (PLASTIC)
PIPE-CULVERTS & STORM SEWERS (PLASTIC)
PIPE-CULVERTS (PLASTIC)
PIPE-CULVERTS (RUBBER)
PIPE-SMOOTHWALL DRAIN (PLASTIC)
SOIL EROSION UNIT (GUSS)

PAPER PRODUCTS

ABSORBENTS (PAPER)
ANIMAL BEDDING (PAPER)
COMPUTER PAPER-BLUE/GREEN BAR
COMPUTER PAPER-CARBONLESS (NCR)
COMPUTER PAPER-CONTINUOUS BOND
COMPUTER PAPER-CONTINUOUS FORM BOND
COMPUTER PAPER-FINE EDGE
COMPUTER PAPER-FORM BOND
COMPUTER PAPER-GREENBAR
DRY GUM PAPER
FIREPLACE LOGS (PAPER)
GREETING CARDS
NEWSPRINT
PACKAGING-BOXES (PAPER)
PACKAGING-CELLULOSE WADDING (PAPER)
PACKAGING-MAIL BAGS, PADDED
PACKAGING-MAILING TUBES
PACKAGING-PROTECTIVE (PAPER)
PACKAGING-SHREDDED PAPER
PACKAGING-WRAPPING (CHIP PAPER)
PACKAGING-WRAPPING (DECORATIVE)
PACKAGING-WRAPPING (KRAFT)
PAPERBOARD
PAPERBOARD-POSTER/SIGN
PAPERBOARD-BRISTOL/INDEX
PAPERBOARD-CONSTRUCTION PAPER
PAPERBOARD-INDEX GRADES
PAPERBOARD-LINERBOARD
PAPERBOARD-POSTER/SIGN
PAPERBOARD-SHELLBOARD
PAPERBOARD-TUBESTOCK
PRINTING PAPER-ARTIFICIAL PARCHMENT
PRINTING PAPER-BOND
PRINTING PAPER-BOOK
PRINTING PAPER-COATED OFFSET
PRINTING PAPER-COPY/XEROGRAPHIC (OTHER)
PRINTING PAPER-COPY/XEROGRAPHIC HI SPEED
PRINTING PAPER-COTTON FIBER
PRINTING PAPER-COTTON FIBER ENVELOPES
PRINTING PAPER-COVER STOCK
PRINTING PAPER-ENVELOPES (STATIONERY)
PRINTING PAPER-EXERCISE
PRINTING PAPER-FILM COATED
PRINTING PAPER-INDEX
PRINTING PAPER-LEDGER PAPER
PRINTING PAPER-LEGAL PADS
PRINTING PAPER-LINED PADS
PRINTING PAPER-MAP PAPER
PRINTING PAPER-OFFSET
PRINTING PAPER-RAG PAPER
PRINTING PAPER-TEXT
PRINTING PAPER-WRITING (STATIONERY)
TISSUE-FACIAL
TISSUE-INDUSTRIAL WIPERS
TISSUE-NAPKINS
TISSUE-TOILET
TISSUE-TOWELS

PLASTIC PRODUCTS

BAGS-GARBAGE CAN LINER (PLASTIC)
BAGS-PLASTIC
BAGS-RETAIL
BENCHES-LOCKER (PLASTIC)
BENCHES-PARK
BICYCLE RACKS
BOXES-COMPARTMENT (PLASTIC)
BOXES-HINGED BOX (PUSTIC)
BOXES-ROUND UNHINGED (PUSTIC)
BOXES-UNHINGED (PLASTIC)
BUCKET (PLASTIC)
BUILDING TRIM (PLASTIC)
CONTAINER-ASH/TRASH REFUSE
CONTAINER-BUCKET 1-6.5 GAL.CAP. (PLASTIC)
CONTAINER-BULK - 30 TO 53 CU FT CAPACITY
CONTAINER-CURBSIDE PICK-UP (PLASTIC)
CONTAINER-DROP OFF
CONTAINER-FINE PAPER COLLECTION
CONTAINER-NEWSPAPER COLLECTION
CONTAINER-REFUSE
CONTAINER-SEMI-AUTO REFUSE
CONTAINER-TRASH BINS (PLASTIC)
CONTAINER-WASTEBASKET
CURB EDGING (PLASTIC)
CUSTOM INDUSTRIAL MOLDINGS (PLASTIC)
CYLINDER MOLDS (PLASTIC)
DECKING
DESK TOP ACCESSORIES (PLASTIC)
DOCK FACINGS (PLASTIC)
DOCK FENDERS (PLASTIC)
DOCKS
EGG CARTONS (PLASTIC)
FENCE-ELECTRIFIED
FENCE-POST (PLASTIC)
FENCE-PRIVACY
FENCE-RANCH FENCING AND GATES
FENCE-SAFETY (PLASTIC)
FENCE-SNOW (PLASTIC)
FITNESS COURSES
FLOORING-ANIMAL (PLASTIC)
GAME GOALS/BACKSTOPS
GEOTEXTILES
HANGING FILE (PLASTIC)
ICE SCRAPER (PLASTIC)
LAND FILL PRODUCTS-CAPS
LAND FILL PRODUCTS-LINERS
LAWN FURNITURE
LIGHTING-FLUORESCENT COVERS (PLASTIC)
LUMBER (PLASTIC)
MANHOLE STEPS (PLASTIC)
MATS-FATIGUE (PLASTIC)
MATS-FIRE ENGINE CAB (PLASTIC)
MATS-TRACTION (PUSTIC)
MATS-TRUCK BED (PLASTIC)
PALLET (PLASTIC)
PARKING BOLLARDS (PLASTIC)
PARKING STOPS (PLASTIC)
PICNIC TABLES
PLAYGROUND EQUIPMENT
POSTS-FENCE
POSTS-MAILBOX
POSTS-ROAD MARKER/REFLECTOR
POSTS-SIGN AND SUPPORTS
POSTS-UNDERGROUND UTILITY
SAFETY BARRIERS (PLASTIC)
SAND BOXES
SHEET-MULTI PURPOSE FLAT
SHEET-PET (PLASTIC)
SHORE EROSION PROTECTION
SHOWER DIVIDERS (PLASTIC)
SPEED BUMP (PLASTIC)
STADIUM SEATING
SUPPORT PILINGS
TABLE-PIC.NC
TOILET PARTITIONS (PLASTIC)
TRACTION PAD (PLASTIC)
TRAYS FOOD
URINAL SCREEN (PLASTIC)
WALKWAYS-BOARDWALKS
WALKWAYS-BRIDGE
WALL PANELS (PLASTIC)

LANDSCAPING/OARDENING PRODUCTS

COMPOST
FLOWER POTS-NURSERY
HYDROPONEX MULCH
HYDROSEEDING MULCH
LANDSCAPE TIMBER

RE-REFINED OIL PRODUCTS

2 CYCLE OIL
AUTOMOTIVE OIL
BASESTOCK (RE-REFINED OIL)
CUTTING OIL
DIESEL LOCOMOTIVE OIL
DIESEL OIL
ENGINE OIL
GEAR OIL
HYDRAULIC OIL
INDUSTRIAL OILS
MIL-L-2104D (RE-REFINED OIL)
MIL-L-2104E (RE-REFINED OIL)
MIL-L-46152C (RE-REFINED OIL)
TRANSMISSION OIL

RECYCLED/FEEDSTOCK PRODUCTS

FEEDSTOCK-ACRYLIC RESIN (PLASTIC)
FEEDSTOCK-CHIPS (RUBBER)
FEEDSTOCK-CRUMB (RUBBER)
FEEDSTOCK-FILLER FIBERS (PAPER)
FEEDSTOCK-FLAKES (PLASTIC)
FEEDSTOCK-HDPE RESIN (PLASTIC)
FEEDSTOCK-INDUSTRIAL FIBERS (PAPER)
FEEDSTOCK-LDPE RESIN (PLASTIC)
FEEDSTOCK-MDPE RESIN (PLASTIC)
FEEDSTOCK-PET RESIN
FEEDSTOCK-PELLETS (PLASTIC)
FEEDSTOCK-POLYPROPYLENE RESIN
FEEDSTOCK-REGRIND (PLASTIC)
FEEDSTOCK-RUBBER & FABRIC STRIPS
FEEDSTOCK-RUBBER PEELINGS
FEEDSTOCK-TRUCK TIRE BEADS

RUBBER PRODUCTS

ASPHALT-CRACK SEALANT
ASPHALT-RUBBERIZED
ASPHALT-RUBBERIZED CHIP SEAL
ATHLETIC SURFACING (RUBBER)
BASES-PORTABLE (RUBBER)
BUCKET (RUBBER)
BUMPER DOCK (RUBBER)
BUMPER-D-GUARD (RUBBER)
BUMPER-DOCK (RUBBER)
BUMPER-TRAILER (RUBBER)
COMMERCIAL FISHING PRODUCTS (RUBBER)
CONTAINER-CURBSIDE-PICK UP (RUBBER)
FENDER-BARGE (RUBBER)
FENDER-BOUY (RUBBER)
FENDER-BULK HEAD (RUBBER)
FENDER-TRAWL DOOR (RUBBER)
FENDER-TUGBOAT (RUBBER)
FLOORING-ICE ARENA (RUBBER)
FLOORING-STABLE (RUBBER)
FLOORING WEIGHT ROOM (RUBBER)
MATS-ACCENT MAT (RUBBER)
MATS-ANTI-FATIGUE MAT (RUBBER)
MATS-BUSTING MAT (RUBBER)
MATS-ENTRANCE MAT (RUBBER)
MATS-EXERCISE MAT RUBBER
MATS-FATIGUE MAT (RUBBER)
MATS-HOCKEY MAT (RUBBER)
MATS-LIVESTOCK (RUBBER)
MATS-TRACTION RUBBER)
MATS-TRUCK BED (RUBBER)
PADS-BACK HOE (RUBBER)
SPEED BUMP (RUBBER)
TILE-FLOOR (RUBBER)
TIRES-REMANUFACTURED
TIRES-RETREAD TRUCK
WHEEL CHOCK-AUTOMOTIVE (RUBBER)
WHEEL CHOCK-AVIATION (RUBBER)

MISCELLANEOUS PRODUCTS

BOOKLETS-BROCHURES (EDUCATIONAL)
GAMES/TOYS-CARD GAME (EDUCATIONAL)
CONTAINER-BOTTLES & JARS (GLASS)

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FACT SHEET

McDonald's Corporation • One McDonald's Plaza • Oak Brook, Illinois 60521

RECYCLING IN THE U.S.A.

- Approximately 160 million tons of municipal solid waste, commonly called "garbage", is produced each year in the United States.
- By percentage of weight, this 160 million tons of waste is made up of paper (40%), yard waste (18%), food wastes (12%), glass (8%), plastics (7%), steel (7%), aluminum (2%), and all other materials (6%). All quick service restaurant industry packaging accounts for only 1/4 of 1% of landfill solid waste.
- Currently, 80% of the country's solid waste is placed in landfills, 10% is recycled and 10% is incinerated. The EPA's 1992 goals for waste disposal are as follows: 55% for landfills, 25% for recycling and 20% for incineration.
- Ten years ago, there were 18,500 landfill sites in the U.S. Today, there are 6,000. By the mid-1990s, about one-half of those sites are expected to be closed.
- Recycling of most materials saves energy and resources, particularly versus the alternative of producing products from virgin raw materials. It also eliminates items from entering the solid waste stream.
- Markets for recycled products must continue to expand so that lack of demand does not become a major constraint to local recycling programs.

Sources: J. Winston Porter, "Municipal Solid Waste Recycling: The Big Picture" (U.S. Conference of Mayors Recycling Conference, March 29, 1990).
W.L. Rathje, "RUBBISH!", The Atlantic Monthly, December 1989.

90/4/12:mpcrecyc



RECYCLED PAPER

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TESTIMONY GIVEN BY

MARGO LANE
COMMUNICATIONS MANAGER
GARDEN STATE PAPER COMPANY

AT THE

NEW JERSEY GENERAL ASSEMBLY

WASTE MANAGEMENT, PLANNING
AND RECYCLING HEARING

THURSDAY, MAY 10, 1990

TRENTON, NEW JERSEY

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I am here today to provide testimony on behalf of Garden State Paper Company, headquartered in Elmwood Park, New Jersey. Garden State Paper is well known by recyclers here in New Jersey. In 1961 the world's first commercial newsprint manufactured exclusively from old newspapers was produced at the Garden State Paper mill in Garfield, New Jersey. Since the original Earth Day in 1970, the Garfield mill has consumed 4.5 million tons of old newspapers. The mill consumes 270,000 tons of old newspapers annually or about 750 tons every day. Last year alone Garden State Paper procured a record 182,000 tons of old newspapers (I'll call them ONP) from within New Jersey. To put that in perspective, it would take a 172 mile long line of packer trucks, bumper to bumper to hold that amount of material.

New Jersey's recycling achievements have been truly outstanding. DEP Commissioner Yaskin recently told recyclers attending the 1990 New Jersey Recycling Forum Dinner in New Brunswick that the state's communities have achieved a recycling rate of 24 percent of the MSW. According to the New Jersey Office of Recycling 360,000 tons of old newspapers were recovered through recycling programs during 1988 or over 50 percent of all newspapers circulated in New Jersey were collected and reprocessed back into new products. While the final data is not yet available we believe that the 1989 recovery rate will be significantly higher.

Newspaper recycling has undergone major changes in recent times. New Jersey and other Northeastern states passed laws requiring the mandatory source separation of recyclables. Old newspapers, because of their volume and ease of collection, were one of the most popular materials for municipal recycling programs. The supply of ONP shot up at an unprecedented rate. Although the domestic and export demand for ONP in the Northeastern U.S. increased by over 17 percent during 1989, the market was soft most of the year. This was particularly true of newspapers mixed with other grades of wastepaper.

The bumper crop of ONP recycling without commensurate growth in the demand market led to new legislative initiatives aimed at stimulating demand. California, Connecticut and most recently Maryland passed legislation requiring the use of newsprint paper containing recycled fibers. We also saw the newspaper publishing industry make a serious commitment to the use of recycled newsprint. Publishing companies, such as Knight-Ridder Inc., Gannett, Times Mirror, Scripps Howard and Dow Jones & Company as well as many of the smaller companies, pledged to use significant amounts of recycled newsprint as quickly as it could be made available.

Virgin fiber newsprint paper manufacturers received a clear message to prepare themselves to make newsprint paper with recycled fiber content. Virtually every newsprint manufacturer in North America investigated how it might incorporate secondary fiber in its newsprint sheet. In addition to the new world-class recycled newsprint machine started last fall at Southeast Paper Manufacturing in Dublin, Georgia, Atlantic Packaging is scheduled to bring another new machine on line later this year in Whitby, Ontario, which will use 100 percent recycled fiber for its furnish. A number of new deinking facilities have been announced and are under various stages of permitting and construction. North American newsprint producers which have announced such projects include Canadian Pacific Forest Products, Abitibi Price, Daishowa Paper, Donohue, NorPac, Newstech, and Bowater. Each of these are major projects which will place substantial incremental demands on the U.S. ONP supply market. These changes are in motion and need a chance to develop without additional stimulation which could cause apprehension about the supply market's ability to support additional growth. The supply market must demonstrate that it can, in fact, reliably feed this substantially larger demand.

I would also like to comment on the current market for old newspapers in New Jersey. Contrary to what you may have heard there IS a market for old newspapers. Garden State Paper is willing to enter into long term purchase agreements with New Jersey municipalities for loose newspapers which have not been comingled with other grades of waste paper.

The GSP deinking technology is the most advanced technology available for handling the variety of newspaper printing processes in use today. It deinks all of them well, including flexography. We have also made major improvements in the system's ability to remove contaminants found in municipally sourced old newspapers. The company's technical staff is continually working to keep Garfield on the leading edge of the quality issue. In fact, Garden State Paper spent \$25 million for process improvements during the past few years. We feel that investment is paying off in terms of marketplace acceptance of our finished product. However, product quality is an ongoing endeavor, and we cannot afford to give up the process-related gains through relaxed raw material standards. Garden State Paper continues to encourage the development of clean newspapers only source separated programs.

In the future it can be anticipated that other newsprint manufacturers will also be purchasers of clean New Jersey generated ONP as their deink pulp lines become reality.

New Jersey State Library

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In summary the North American newsprint producing industry is clearly committed to increasing the use of waste paper in its products. Further initiatives at this point in time to stimulate demand could be counter productive. There is a good market for old newspapers in New Jersey today. Garden State Paper is willing to sign long-term agreements for clean old newspapers.

Municipalities that place emphasis on the high quality of the old newspapers they collect from residents are the ones who will be successful in effectively marketing their product to old newspaper consumers such as Garden State Paper. Thank you.

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5/10/90

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Testimony
presented by
Ogden Martin Systems, Inc.,

on behalf of the
INSTITUTE OF RESOURCE RECOVERY

before

New Jersey State Legislature
Assembly Solid Waste Management Committee

Public Hearing:
Recycling in New Jersey

Trenton, New Jersey

May 10, 1990

52X

Good Morning, Mr. Chairman. Thank you for the opportunity to present testimony on the issue of recycling in New Jersey. I am here today from Ogden Martin Systems, Inc. Ogden Martin is one of the member firms of the Institute of Resource Recovery. The IRR is comprised of firms that design, build and operate facilities to recover energy and materials from trash while stabilizing it and reducing its volume through controlled combustion. The IRR is a component of the National Solid Wastes Management Association (NSWMA), a trade group with over 2,500 members of the private waste services industry.

Five companies of the IRR do business in New Jersey at twelve facilities in various stages of development. The combined waste capacity of these twelve facilities once completed will be 16,330 tons per day, which represents about 50% of New Jersey's waste stream. The IRR believes an integrated approach is necessary for optimal solid waste management. This integrated approach gives priority to treating as a valuable resource those materials that would be disposed by less useful means. Integrated solid waste management allows localities to select the technologies that will best handle their waste disposal problems and that could include waste reduction, recycling, combustion and resource recovery, and landfilling.

The IRR recognizes the importance of recycling as one of the highest priorities of integrated waste management. It is a valuable means of recovering continuing value from used materials, and of reducing the volume of waste that eventually requires disposal. New Jersey's

mandatory source separation legislation enacted in 1987, which set a statewide goal of 25% reduction of the waste stream, should help New Jersey recover substantial value from waste materials for their highest and best reuse. Although currently the State recycles approximately 20% of its waste stream, increased efforts in planning and market development should enable the State to achieve and perhaps surpass its goal.

Recycling can benefit the operation of waste-to-energy facilities in a well-planned waste management system. Recycling encourages the removal of certain items from the waste stream which improves waste combustion. Glass, aluminum, metals, batteries and yard waste, for example, are items that do not either contribute to efficient combustion in modern waste-to-energy facilities, or can add to the burden of pollutants that must be removed by state-of-the-art pollution controls. Removing these items for recycling can increase the heat value of a unit volume of fuel by up to 25%, while reducing ash content by weight by about 50% and carbon monoxide and hydrocarbon emissions significantly. Removal of automotive batteries reduces heavy metals emissions of lead, cadmium and mercury in the air and ash; yard waste removal decreases nitrogen oxide levels in emissions.

Conversely, recovery of energy can complement recycling in recovering full value from our waste material. For economic or technical reasons, some waste materials cannot be recycled, but do hold substantial value as an energy source. And many materials that are recyclable, such as

newsprint, cannot be recycled indefinitely. Eventually, their usefulness as recycled materials are exhausted, and at least one beneficial use before ultimate disposal is in the recovery of energy.

IRR firms are actively engaged in recycling programs. In fact, in New Jersey, permits for resource recovery have not been issued without recycling plans playing an important role. Such plans include agreements with materials separation facilities, curbside collection recycling programs, post-combustion materials recovery and ash reuse applications.

Curbside programs result in excellent recovery of high quality recyclables. These programs teach consumers to both reuse and reduce the waste generated. Their individual cooperation is essential. In Gloucester County, the Wheelabrator waste-to-energy facility will complement the County's aggressive curbside recycling program.

A materials recovery facility working in conjunction with the County and its resource recovery facility enables the volume of the waste to be significantly reduced and valuable recovery of resources. This will be evidenced in Monmouth County, where a recently awarded project to Westinghouse includes a materials separation facility to be constructed on the premises.

IRR firms also recover ferrous metals from the residual ash. Last year, Ogden Martin recovered 54,000 tons of scrap ferrous metals nationwide.

This is a fairly simple process, as the recovery rate for post-combustion ferrous metals is approximately 70% to 90%. Shredding this material results in a high quality metal which sells at the going market rate in New Jersey of about \$60 per ton.

State-of-the-art technology currently employed by IRR members renders the ash resulting from the waste-to-energy process into a basically inert substance closely resembling a low strength concrete when it sets up in a landfill. This residual ash has been increasingly investigated for use in applications such as roadbed fill, aggregate for asphalt and cement, and artificial reef construction.

In summary, IRR supports integrated solid waste management, which allows local government to select the best waste management options to fit their needs and could include waste reduction, recycling, resource recovery and landfilling. The rapidly growing garbage problem in New Jersey must be dealt with, and we believe this includes a need to emphasize recycling. It has been our experience that waste-to-energy has been an effective partner with recycling, and we seek to strengthen this partnership in efforts to solve New Jersey's waste problem.



NEW JERSEY STATE
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NJ STATE CHAMBER OF COMMERCE
COMMENTS ON
THE PROGRESS OF PLASTICS RECYCLING
ASSEMBLY WASTE MANAGEMENT
PLANNING AND RECYCLING COMMITTEE

May 10, 1990

Assemblyman McEnroe, members of the committee, my name is Clare Schulzki and I'm Associate Director of Governmental Relations for the State Chamber of Commerce. We welcome the opportunity to comment today. We believe we can help set a tone for the commitment of the business community. Many of our members have made substantial investments in plastic recycling technology and I'll let them detail their specific experiences.

The State Chamber has long been a supporter of recycling. We've put it into practice in our own office. We've also encouraged our members to create markets and opportunities to recycle materials which they have done and will continue. A good example is Union Carbide Corporation in Piscataway. They've launched the first full-scale multi-plastics recycling facility which will accept not only materials from industry but municipalities as well.

We believe that New Jersey has come a long way with recycling but still has further to go, specifically with plastics. In 1986, only a few municipalities recycled PET and HDPE plastic bottles. In 1989, estimates were made that municipalities recycled over 1,075 tons of PET bottles alone. We believe that the demand for recycled plastics will continue to grow and more processing facilities will continue to open.

As we've done in the past, the State Chamber supports efforts to expand the materials required under the Mandatory Recycling Act to include post-consumer plastic containers. We believe that it's vital to add polyethylene terephthalate (PET), high-density polyethylene (HDPE) and other plastics to the collection of recyclables because this will greatly reduce volume of our waste stream and the cost of disposing of it.

A study conducted late last year on the economic feasibility of adding plastics to existing curbside recycling programs shows benefits larger than the incremental costs of adding the materials to the program. In other words, it's cost effective to recycle plastics. The study examined five very different towns in New Jersey, Sayreville, Berlin Township, Upper Township, Trenton and Paramus who added PET and HDPE bottles to their curbside recycling programs. The results showed that *each* town saved money from avoiding landfill costs. This in turn far outweighed the costs of collecting the extra materials. As our waste disposal costs continue to rise, the cost savings of recycling plastics will also increase. We simply must recycle more of our waste.

Assemblyman Albohn has sponsored legislation, A-128, which would require municipalities to add PET, HDPE and other plastic materials to their recycling program. We support this bill and urge its passage.

In the past year, there have been proposals to ban certain types of plastics or place taxes on them because these items don't degrade or disappear. We don't believe that this is the most effective way to reduce our waste. The fact that they're being touted as a solution is really misleading and could be counterproductive to long term plastic recycling efforts.

Unsightly trash on the roadside, improperly disposed of is a *litter* problem and not just associated with plastics. Our members in businesses, large and small, have addressed this and contribute to the Clean Communities Program. It's *people* who litter when they're driving to the beach and toss their soda cup out the window or leave their cans behind. We need to continue to change people's habits and educate them on the benefits of recycling and how it impacts their lives.

We also supported the passage of Public Law 268 of 1989, which will make plastics recycling even easier by adopting the uniform plastic container coding program of the Society of the Plastics Industry. Containers will be coded with a number which will aid in determining the type of plastic and its content.

We've enclosed a summary of the study on the costs of adding plastics to curbside recycling programs for your review.

In our everyday lives we've come to rely on plastic for good reason, including their light weight, strength and low costs. We believe that recycling of plastics does and will continue to have a substantial cost benefit to both citizens and the business community. We urge the passage of A-128 to amend the Mandatory Recycling Act to include PET, HDPE and other plastics. New Jersey's a natural leader in recycling and the measures we've outlined can go a long way toward developing the necessary infrastructure to make us a leader in plastics recycling as well.

Thank you for the opportunity to speak today.

NJFC
New Jersey Food Council

“An Industry
Initiative On
Solid Waste”



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The New Jersey Food Council (NJFC) is a trade association representing retail supermarkets, convenience stores and food manufacturers in New Jersey.

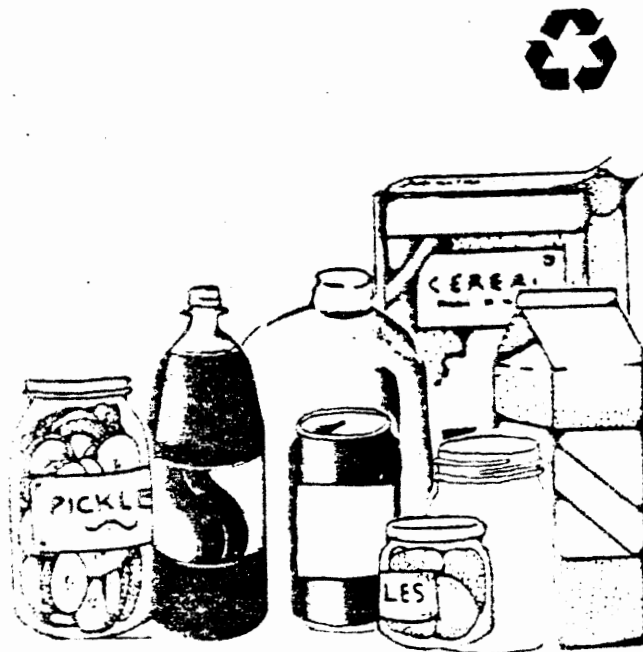
NJFC has been an effective partner in helping to identify and implement solid waste solutions. Under New Jersey's voluntary and mandatory recycling programs, the food industry recycles over 400,000 tons of corrugated cardboard as well as fat and bone each year. This contributes significantly to the amount of tonnage grants municipalities receive.

In 1984, the food industry educated consumers on how to identify products made from recycled materials. In 1985, the industry supported the enactment of mandatory recycling legislation, and initiated the Clean Communities program. The food industry has served as an information vehicle for the state's public relations program on recycling—printing state and local messages on grocery bags.

In 1989, the New Jersey Food Council served on a national food industry task force on solid waste which resulted in industry-wide support and financial initiatives for plastic recycling; market development for recycled materials by encouraging greater use in packaging; removal of toxic materials from labeling; universal coding of plastic containers. More recently, the NJFC Solid Waste Committee launched a consumer education program through member stores designed to promote source reduction and recycling.



New Jersey Food Council
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Introduction



New Jerseyans produce over 11 million tons of garbage every year. That's more than 4 pounds per day for each resident in the state.

Available landfill space has reached capacity. Subsequently, we must go outside our state borders to find landfills for our garbage.

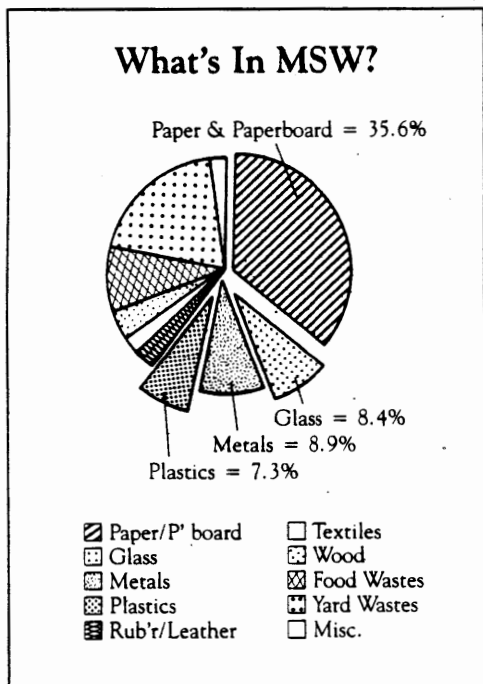
Transporting garbage to other states has significantly increased the cost of disposal. It is also unreliable. For these reasons, alternative disposal methods have emerged.

The New Jersey Department of Environmental Protection (NJDEP) advocates a four-pronged approach to managing our garbage.

- Source Reduction
- Recycling
- Waste-to-Energy Resource Recovery
- Landfilling

The NJDEP has set a goal to recycle a minimum of 25% of our garbage. That goal will not be met unless, individuals, businesses, institutions and government participate.

What is in our garbage? Franklin Associates, Ltd., and William Rathje, Professor of Anthropology at the University of Arizona, have excavated landfills to determine what's in them.



"I believe that everything in our landfills—paper towel, plastic sandwich bag or melon rind—is part of our refuse disposal problem. I also hold the firm conviction that we will be able to establish our priorities and our options only when we have realistic perceptions of what solid wastes we actually throw away."

W.L. Rathje, Ph.D.
Professor of Anthropology
University of Arizona

"An Industry Initiative On Solid Waste"

SOLID WASTE:

The New Jersey Food Council Perspective

The New Jersey Food Council has been a leader among industry in initiating, developing and implementing workable, comprehensive solid waste solutions.

Food retailers and manufacturers alike are concerned about protecting the environment and about creating a safer, cleaner world for future generations.

As the purchaser and supplier of food and non-food products to New Jersey's consumers, we believe the food industry has a special opportunity to view every product with an eye towards ensuring that the manufacturing process and the disposal process are as safe and technologically advanced as they can be. In addition, we believe we have a unique opportunity to stimulate demand for products and packaging that promote source reduction and recyclability, and to participate in the dynamic interplay between marketplace variables, consumer concerns and government policies.

The New Jersey Food Council firmly supports NJDEP and EPA's integrated approach to solid waste management. We believe that this broad strategy is essential if we are to achieve the government policy goals of 25% reduction in solid waste by 1992. This approach is fourfold:

Source Reduction—a state and national commitment to reduce the amount of material that enters the disposal and landfill system.

Recycling and Reuse—an emphasis on using our resources as thoroughly as possible before they are discarded.

Waste to Energy Incineration—making the best use of items which can be safely incinerated to provide us with an independent source of energy.

Landfill—the last resort for materials that fall outside the other options.

"We believe we have a unique opportunity to stimulate demand for products and packaging that promote source reduction and recyclability, and to participate in the dynamic interplay between marketplace variables, consumer concerns, and government policies."

**Jerome Yaguda, President,
Wakefern Food Corporation**

Opportunities For Source Reduction

The New Jersey Food Council believes that for Source Reduction initiatives to be most effective, they must be based upon a system of goals and standards, and built upon a shared understanding by industry as to what constitutes "source reduction".

To guide source reduction programs within the food industry, the following goals should be perceived:

- Volume reduction
- Weight reduction
- Recyclability
- Recycled content
- Toxicity reduction

However, in our pursuit of source reduction, we must not lose sight of the important roles of packaging.

Packaging of consumer products serves many purposes and is an integral part of modern life.

Packaging is needed primarily to contain and protect products during transportation, storage and display. It can prevent breakage, spoilage, product tampering and even theft.

Consumer information is another important function of packaging. Packaging is also designed for convenience—not only for the consumer, but also for retailers and other handlers. Packaging can also serve simply to enhance attractiveness for marketing.

But, packaging also contributes to two principal solid waste management problems. The first is the quantity of waste generated; and, secondly, packaging contains materials and substances that effect the quality of the waste stream.

Both the quantity and quality impacts of packaging add stress to the state's overburdened solid waste management system. This translates into increased disposal costs, and widens the gap between the environmentally sound disposal capacity that is needed versus that which is available.





"As the purchaser and supplier of food and non-food products to New Jersey's consumers, we believe that the food industry has a special opportunity to view every product with an eye towards ensuring that the manufacturing process and the disposal process are as safe and technologically advanced as they can be."

**James Burke, President,
Twin County Grocers.**

Opportunities To Increase Recycling

The New Jersey Food Council and its member companies have been in the forefront of recycling in New Jersey, by supporting New Jersey's Mandatory Recycling Act; recycling thousands of tons of corrugated, fat and bones; and by working with municipalities in helping them to reach their 25% recycling rate. While New Jersey's program was one of the first in the nation, and is being duplicated by other states and countries, its success will depend on source reduction initiatives and market development. The New Jersey Food Council continues its commitment to recycling and recommends action in the following areas to increase these efforts:

"The food industry has always been in the forefront of consumer responsiveness. Therefore, we intend to move forward, with thoughtful solutions, to the problem of solid waste disposal and packaging."

**Jack Futterman, President and CEO,
Supermarkets General Corporation.**

Recommendations And Action Plan

- Support mandatory recycling of plastics.
- Support greater use of packaging made from materials that can be recycled.
- Support increased use of packaging made from recycled materials in order to stimulate markets.
- Support SPI voluntary coding symbol of plastic containers by materials types.
- Support recycling of new materials such as polystyrene, and bi-metal.
- Support federal initiatives that increase national recycling rates.
- Support a reduction in the total volume of disposable packaging waste generated.
- Support redesign of packaging to reduce materials where it is feasible.
- Urge removal of toxic materials from packaging, such as cadmium, lead, etc.
- Urge removal of toxic leads in printing of labels.
- Support standardized definitions and uniform labeling of "environmentally friendly" products.
- Encourage the use of bulk or family size packages; concentrates or dehydrated products in smaller packages.
- Support research and development of source reduction possibilities and its impact on society, cost effectiveness, etc.
- Support consumer education programs that are designed to promote source reduction and recycling. However, this should not be used as a marketing gimmick and should not be undertaken until there is greater uniformity and understanding as to what will produce a more durable behavioral change in customers purchasing habits.
- Educate industry executives, buyers, and employees as to source reduction goals, and provide guidelines for environmental buying decisions, i.e.:
 - Can it be recycled?
 - Is it made from recycled materials?
 - Does it contain toxic inks or materials?
 - Can a manufacturer back its claim of "biodegradable"? If so, under what conditions?
 - Is there a comparable product that weighs less and/or contains less packaging?
 - Can it be reused?
 - Is the packaging marketable, safe, and is it sufficient to maintain the quality and life of the products?
 - What are the competing public concerns? (i.e., hygiene, nutrition, consumer information, etc.)
 - If you buy and sell this product, are you promoting a myth, or are the environmental claims based on facts? (i.e., "biodegradable")



Barriers To A Successful Solid Waste Program

The New Jersey Food Council recognizes the frustration felt by local municipal officials and the costs associated with solid waste disposal. However, we oppose any measure that is not part of a comprehensive approach and that perpetuates myths and misunderstandings about solid waste solutions. As a result, we oppose the following proposals:

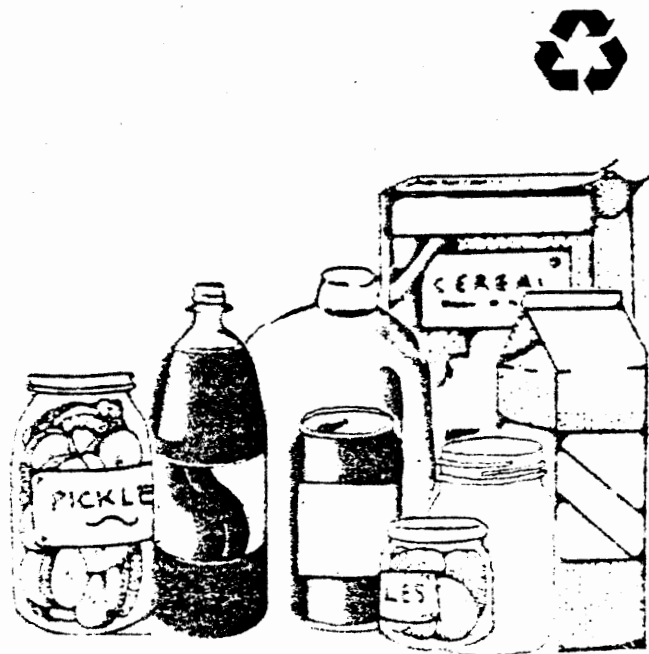
- Any legislation or policy that perpetuates the myth of "biodegradability".
- Mandatory deposit legislation.
- Arbitrary bans on certain packaging materials, such as polystyrene and polyvinyl.
- Taxes on plastic containers, which result in a tax on food and provides no meaningful solution to solid waste disposal.
- State legislation that establishes standards and definitions of packaging which should be established on a national level.

"We are in a unique position to educate our consumers . . . to educate our associates . . . and to educate ourselves on this critical environmental issue. We look to the New Jersey Food Council to take the lead again in developing pro-active programs for all segments of the industry."

**Jim Meister, President and CEO,
Kings Super Markets, Inc.**

"The Campbell Soup Company recognizes that finding environmentally safe and cost-effective ways to minimize and dispose of solid waste is a national and global priority. We are dedicated to providing the safest, most technologically appropriate and environmentally friendly packaging for all of our food products. We will continue to work with the New Jersey Food Council and all segments of the food industry to ensure development of comprehensive solutions to this critical problem."

**Herbert M. Baum, President,
Campbell North America**





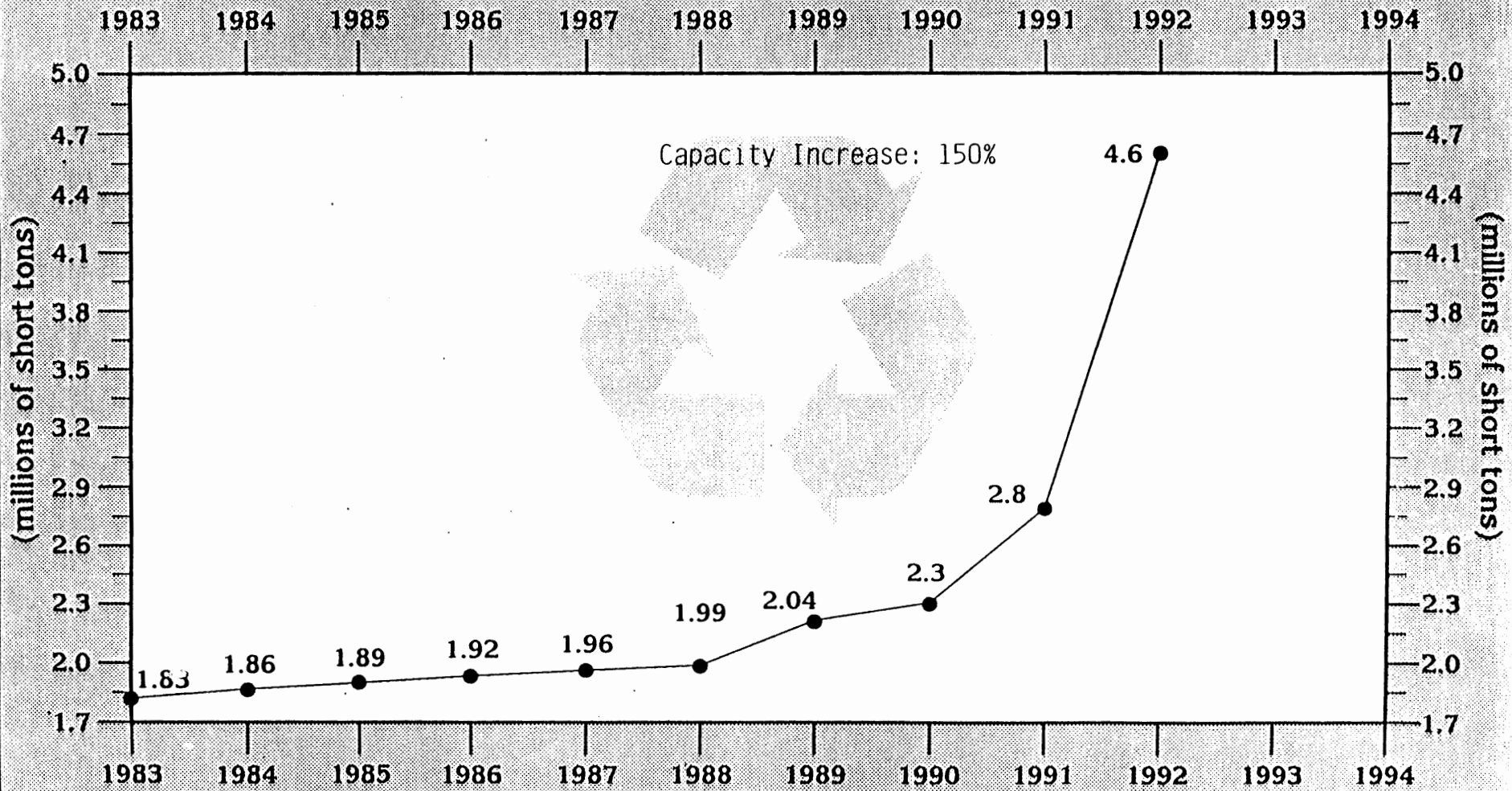


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Printed on recycled paper: French's Speckleton Grenoble Gray

67X

Recycled Newsprint Capacity in North America



Note: ANPA estimate a 1992 market of 14.3 million short tons.

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