sanitation
Kathryn Garcia Commissioner

Testimony of Kathryn Garcia, Commissioner
New York City Department of Sanitation

Hearing before the New York City Council
Committee on Sanitation and Solid Waste Management

Friday, May 13, 2017
1:00 P.M.
250 Broadway, 16th Floor

Intro No. 1480 – A Local Law to amend the administrative code of the city of New York, in relation to designating expanded polystyrene as recyclable and repealing sections 16-324 (f) and 16-329 of the administrative code of the city of New York

---

Good afternoon Chair Reynoso and members of the City Council Committee on Sanitation and Solid Waste Management. I am Kathryn Garcia, Commissioner of the New York City Department of Sanitation. Also with me is Bob Orlin, Deputy Commissioner for Legal Affairs for the Department. I am here today to speak briefly on expanded polystyrene Food-Service Foam.

New York City Local Law 142 of 2013 requires the New York City Sanitation Commissioner to make a determination about the recyclability of expanded polystyrene single service articles, also known as Food-Service Foam. This includes food service items that are intended by the manufacturer to be used once for eating or drinking or are generally recognized by the public as items to be discarded after one use, which is, by its very nature, dirty. Local Law 142 required that this determination be based on: 1) environmental effectiveness, 2) economic feasibility, and 3) the safety of Department employees and the employees of the City's designated recycling processing facility run by the City's recycling processor, Sims Municipal Recycling at the South Brooklyn Marine Terminal.

Throughout 2014, the Department analyzed the potential for collecting and sorting Food-Service Foam into its Metal Glass and Plastic (MGP) recycling program. The Department also investigated whether markets exist for Food-Service Foam, which is the type of foam that the Department would be able to collect as part of the MGP program. The Department visited several California facilities to understand existing Food-Service Foam recycling efforts elsewhere in the United States and the feasibility of recycling Food-Service Foam in New York City.

In January 2015, the Department issued a determination that Food-Service Foam can be collected and sorted in a manner that is safe for employees, but it could not be recycled in a manner that is economically feasible or environmentally effective. This determination was based on the fact that there were no established markets to purchase and recycle the Food-Service Foam that would be collected by the Department's commingled MGP program because it would

be considered unmarketable. To date, Food-Service Foam, as defined in Local Law 142 of 2013, has never been listed as a recycled commodity in a trade journal. As the Department determined that Food-Service Foam could not be recycled, these articles as well as packaging peanuts were to become banned on July 1, 2015 in accordance with Local Law 142.

In April 2015, a coalition of plaintiffs representing various businesses connected with Food-Service Foam products filed a lawsuit challenging the Department's determination, which the New York State Supreme Court subsequently annulled and vacated in the case of *Restaurant Action Alliance NYC v. The City of New York*. The Court remanded the matter to the Sanitation Commissioner for reconsideration.

The Department will issue its new determination later today. This determination again finds that Food-Service Foam cannot be recycled in a manner that is environmentally effective or economically feasible.

For 30 years, attempts to recycle Food-Service Foam—both subsidized and non-subsidized attempts—have failed at each step of the recycling process. The municipalities and programs that the Department researched tell a very clear story: Food-Service Foam is not capable of being recycled in an environmentally effective or an economically feasible manner.

The municipalities found that Food-Service Foam compacts in collection trucks, breaks into bits, and becomes covered in food residue, making it worthless when it arrives at the material recovery facility ("MRF"). It then blows throughout the MRF, is missed by manual sorters, mistakenly moves with the paper material and contaminates other valuable recycling streams, namely paper, which can be the most consistently valuable commodity in a recycling program. Food-Service Foam is too costly to clean and process compared to virgin material. If some is sorted successfully, the light-weight foam must be stored for months, waiting for enough material to economically ship.

If any Food-Service Foam makes it over these hurdles, the process grinds to a stop due to the struggle to find a buyer. With no buyer, municipalities get stuck with the material and ultimately send the remaining amount of Food-Service Foam that was not already landfilled after the compacting or sorting phases to a landfill.

This has been the experience of the large municipalities contacted by the Department -- the same municipalities that Dart suggested the Department research -- and several other small and large municipalities that also attempted to recycle Food-Service Foam. After designating Food-Service Foam, numerous municipalities end up disposing of the material at each step in the recycling process. There is no basis to expect that New York City's experience will be any different.

Accordingly, the Department strongly opposes Intro No. 1480, because it would require the Department to designate, as recyclable, a material that is not recyclable.
However, I wish to note that even if Food-Service Foam were designated as a recyclable material, there is a strong likelihood this material will continue to be landfilled based on what we see in other cities in North America, so there is little justification for the Department to ask over 8.5 million people to source separate post-consumer food service foam items as part of the MGP program. Throwing this material directly into the trash—as we currently ask City residents to do—is a more efficient way to dispose of it. Moreover, if Food-Service Foam is collected as part of the Department's MGP collection, our research shows that it is likely to contaminate other recyclables streams that do have value; this is because Food-Service Foam tends to

easily break into small pieces, which are difficult to sort effectively, and these small, lightweight pieces can easily spread around a recycling facility.

I look forward to further discussion with the Committee Chair and the Council Speaker regarding the Department's new determination as to why Food-Service Foam should not be designated as a recyclable material. I would also like to personally thank this Committee and the Council for its continuing support for all of the Department's current sustainability and solid waste management programs.

DART CONTAINER CORPORATION
www.dart.biz
500 HOGSBACK ROAD • MASON, MICHIGAN 48854 • (800) 248-5960

May 12, 2017

New York City Council
Committee on Sanitation & Solid Waste Management
250 Broadway
New York, NY 10007

RE: Int. No. 1480- Addition of expanded polystyrene in residential recycling program- SUPPORT

Dear Honorable Committee Members,

My name is Michael Westerfield and I am the Director of Recycling programs for Dart Container Corporation. We are here today to support Intro. 1480 which would include foam cups and other foam products in NYC's residential recycling program.

In 2013 we were invited by DSNY and Mayor Bloomberg's office to produce a recycling solution for polystyrene foam, and that is exactly what we did. Dart offered a comprehensive recycling solution for NYC. That comprehensive plan would enable NYC residents to place their used foam products in the same recycling bin as their metal, glass, and plastic. These materials would then be collected by DSNY, just as metal, glass and plastic is now, and delivered to one of two sorting facilities. Once at the sorting facility, the foam products would be sorted just the same as other metal, glass, and plastic, and bundled for shipment. Once the sorter has a container load of the material ready for shipment, our partner Plastic Recycling Inc. ("PRI"), an experienced recycler, will pay a guaranteed price of at least $160.00 per ton. PRI will also pay to ship the material by rail to Indianapolis, where it would be washed and recycled in a new state of the art facility much like the facilities that recycle other types of plastic. Once processed by PRI, this material would be sold to plastics manufacturers that use polystyrene to make a variety of products, such as picture frames, office supplies, and architectural moulding.

In 2014, we presented a contract to the City's sorter confirming this offer. We also offered to cover all the costs of retrofitting NYC's two facilities with state-of-the-art sorting equipment that would improve the recycling rate.

As many of you know, we faced significant opposition to our proposal, but in our view, that opposition was baseless and unfounded. In September 2015, a New York State Supreme Court justice agreed with us, finding that "[t]he one undisputed short answer to whether EPS is recyclable is yes: single serve EPS is recyclable." The Court also found that the Department of Sanitation, which had opposed recycling, had provided no evidence for its so-called "finding" that there was no market for this material. To the contrary, the record compiled during the Sanitation Department's review of our proposal made clear that there was a market for New York City's post-consumer EPS products. Our expert economists at the Berkeley Research Group are sharing a summary of that evidence with you today, and you will hear from some market participants as well.

DART CONTAINER CORPORATION
www.dart.biz
500 HOGSBACK ROAD • MASON, MICHIGAN 48854 • (800) 248-5960

Dart and its partners want consumers to use recyclable products whenever possible, and EPS is, without question, recyclable. The arguments that the Sanitation Department has raised in the past have all been refuted:

- When DSNY officials initially argued that "foam is not recyclable," we showed them the technology that proved them wrong. We showed the DSNY the major advancements that have been made in recycling since foam was initially excluded from recycling programs in the 1980s.
- When they argued that "dirty foam is not recyclable," we took a bale of the City's dirtiest, post-consumer food-service foam, washed it, and recycled it, right before their eyes.
- When the previous administration argued that a recycling program would require "1,000 additional truck routes at a cost of $70 million per year," the current Commissioner agreed with us that the current excess truck capacity is enough to collect this lightweight material at no additional cost.
- When the current administration argued that there were no market participants willing to participate in this program, we took them to Court to expose that was not true—and won.
- We also proved the environmental benefits. We showed that recycling EPS as part of the City's program will do more to keep waste out of landfills than a limited ban on food-service foam alone. We've gone even further, presenting evidence from board-certified environmental scientist Bill Goodfellow that shows how recycling EPS can reduce the City's carbon footprint and conserve fossil-fuel resources.
- And the result of this program will be new and marketable products used by consumers every day. This material simply will not go to waste.

Today, polystyrene recycling has been shown to be "environmentally effective" and "economically feasible" for New York City. Some opponents simply do not want the City to do business with a consumer-products company, but that shouldn't be the test for whether recycling is right for New York City. The economics make sense, the environmental benefits are real, and Dart is willing to stand behind this program. In 2014, Dart and PRI guaranteed that PRI would buy all of the City's recovered EPS at the agreed-upon price for at least the first five years. We're reiterating that commitment today.

We're also reiterating our commitment to recycle other polystyrene materials that New York City has been needlessly sending to landfill at a cost of hundreds of thousands of dollars a year. Consistent with our initial proposal, Dart and PRI will also recycle rigid polystyrene products like clear plastic cups and cutlery, further reducing the City's waste disposal costs and the amount of material that goes to landfill.

DART CONTAINER CORPORATION
www.dart.biz
500 HOGSBACK ROAD • MASON, MICHIGAN 48854 • (800) 248-5960

The record is clear that this proposal is a financial and environmental win-win.

- We have produced a winning solution. We built a state-of-the-art recycling facility with PRI, together investing nearly $8 million in a facility that makes foam recycling environmentally effective and economically feasible. As part of our business model, we are working every day to make PRI's state-of-the-art facility even more efficient.
- The Mayor's vision for OneNYC calls for Zero waste. Our plan steers NYC in that direction, offering to reduce net landfill rates starting on Day One.
- The Mayor's vision for Once NYC also calls for GHG reduction- Our plan does that too.
- Our plan doesn't cost the City any money. Dart and PRI bear 100% of the cost, and our customers make it worth our while when we recycle and sell EPS.
- Our plan actually saves the City money by reducing landfill costs, which are borne by the City.
- Our plan generates revenue for the City under the terms of its deal with its municipal sorting facility. When we buy their bales, money gets passed back to the City.
- Our plan is forward thinking and takes advantage of all the new technology available in the recycling industry.
- To oppose this bill simply because a business proposed it is bad public policy. Recycling foam is a win for the environment, a win for taxpayers, and a win for NYC!

I've already mentioned some of the other people who will be testifying today, including expert economists and environmental scientists. But you'll also hear from the plastics recycling expert that designed the PRI facility, who will talk about all of the new technology used at this facility.

And you are going to hear from the owner of Plastic Recycling Inc. about how he is already successfully recycling material just like NYC's.
You will also hear from some other recyclers and market participants that want to buy NYC foam.

After hearing their testimony today, and reviewing the summary attached to this letter, I respectfully ask for you to vote "Yes" for Intro 1480 so together we can help NYC reduce its environmental footprint and move one step closer to Zero Waste!

Thank you,

Michael Westerfield

Michael Westerfield
Corporate Director of Recycling Programs

Recycling vs. Opponents
And the Environmental Winner Is…

Policy Goal	Comprehensive Recycling Plan for Foam and Rigid Polystyrene	Limited Single-Serve Foam Ban	Winner
Consumer Welfare: Are New Yorkers being served by convenient products at an affordable price?	Millions of busy New Yorkers and thousands of the City's small and family-owned restaurants, bodegas, and stores rely on **cost-effective, high-quality EPS packaging.**	Alternatives to foam will cost New Yorkers up to **$51 million more annually**.[1]	**Recycling** 
Zero Waste to Landfills: How much waste will be diverted from landfills annually?	**Every year, at least 17,500 tons** of polystyrene will be diverted from landfills and put to good use in recycled products.[2]	**Every year, up to 13,000–25,000 more tons** of waste will pile up in landfills, as consumers are forced to switch to heavier alternatives.[3]	**Recycling** 
Economic Feasibility: What will it cost the City?	**The Dart-PRI plan will cost the City nothing**, save about $1.9 million per year in landfill costs, and generate at least $2.8 million in annual revenue for the City's MRF.[4]	**It will cost the City up to $1.5 million more** to landfill heavier alternatives and the legal PS that could have been recycled.[5]	**Recycling** 
Energy Consumption: How much energy will be consumed bringing products to market and disposing of them after use?	**No change from status quo.**	**Up to 5.5 to 7 times more energy** will be needed to bring substitute products to market and transport them to landfills or recycling facilities after use.[6]	**Recycling** 
Carbon Footprint: How much carbon dioxide will be emitted?	**The Dart-PRI plan minimizes carbon emissions** and may cut the carbon footprint of EPS disposal by up to 80%.[7]	**At least a 182% increase** in CO_2 emissions.[8]	**Recycling** 

[1] Source: Cantor Report (Feb. 2016).

[2] Source: Cantor Affidavit (July 2015). Assumes 40% residential capture rate and 75% recovery rate at MRFs. Actual numbers may be higher.

[3] Sources: Cantor Affidavit (July 2015); Goodfellow White Paper (2017). Assumes that substitute products weighing between 3 and 4.5 times as much per unit are recycled at a 30% rate, with the rest landfilled, consistent with the rates DSNY estimated for EPS.

[4] Source: Cantor Report (Feb. 2016). Assumes 40% residential capture rate and 75% recovery rate at MRFs. Actual numbers may be higher.

[5] Source: Cantor Report (Feb. 2016). Because the proposed ban does not cover all foam, and foam alternatives are heavier, landfill costs (which are determined by load weights) will increase.

[6] Source: Goodfellow White Paper (2017). Includes resources needed to make substitute paper products from virgin material and transport them to landfills or recycling centers after use. Uncoated paper cups require approximately 2.5 times as much energy to produce per cup compared to EPS. Paper and other alternative products weigh between 3 and 4.5 times as much per unit.

[7] Source: Goodfellow White Paper (2017).

[8] Source: Goodfellow White Paper (2017). Assumes that all single-serve EPS currently shipped to landfills by rail is replaced with heavier products shipped by rail to an equidistant landfill or recycling facility.

May 12, 2017

New York City Council
Committee on Sanitation & Solid Waste Management
250 Broadway
New York, New York 10007

Dear Honorable Committee Members,

1. I submit this testimony on behalf of Dart Container Corporation in support of Intro. 1480 based on the economic and environmental benefits of the proposed Dart/PRI Recycling Plan.

2. I am an economist and a managing director of the Berkeley Research Group ("BRG"), an independent economic research firm. I earned a Ph.D. in Economics from Duke University and an undergraduate degree in Mathematics with a specialization in statistics from Indiana University of Pennsylvania. I have more than 30 years of research, consulting, and teaching experience in applied economics including work related to waste management and the environment. A true and correct copy of my CV is contained in Attachment A. This testimony is based on my personal knowledge and experience as an expert qualified to opine on environmental and applied economics.

3. The scope of my work and analysis related to my current testimony is reflected in a number of prior reports and testimony; including a 2016 memorandum to the New York City Department of Sanitation; two affidavits I submitted in 2015 in connection with *Restaurant*

Action Alliance NYC et al. v. The City of New York, et al.; a 2015 memorandum to Gibson, Dunn & Crutcher LLP; and a 2014 memorandum to the Food Packaging Institute.[1]

4. Dart has asked me to consider in this testimony the market outlook for recycled post-consumer EPS foodware, the public policy implications of the Dart/PRI Recycling Plan versus the previously proposed soft-foam ban, and the landfill implications of the Dart/PRI Recycling Plan compared to no recycling or the previously proposed soft-foam ban.

The Market Outlook for New York City's Recycled Post-Consumer EPS Foodware is Positive

5. First and foremost, it is an established fact and a reflection of current demand that PRI is a ready and willing buyer of New York City's polystyrene. PRI indicated to DSNY that its current demand for these materials is more than 7,500 tons per month or 90,000 tons per year.[2] This demand far exceeds the amount of EPS and PS materials the Commissioner of the Department of Sanitation assumed to be recoverable in the NYC recycling program—approximately 17,500 tons per year.[3] In addition, PRI has guaranteed to pay $160 per ton for these materials for at least five years.[4]

---

[1] *See* Memorandum from BRG to Bridget Anderson, Deputy Commissioner, Recycling and Sustainability, New York City Department of Sanitation (February 24, 2016); Affidavit of Robin Cantor, *Restaurant Action Alliance NYC, et al. v. The City of New York*, et al. (July 9, 2015); Affidavit of Robin Cantor, *Restaurant Action Alliance NYC, et al. v. The City of New York*, et al. (April 27, 2015); Memorandum from BRG to Gibson, Dunn and Crutcher LLP (April 27, 2015); Memorandum from BRG to Lynn Dyer, President, Foodservice Packaging Institute (October 9, 2014).

[2] *See* Letter from Brandon Shaw, Marketing Manager, Plastic Recycling, Inc. to Kathryn Garcia (September 29, 2014).

[3] The amount of potentially recoverable EPS and PS assumed by the Commissioner is calculated as the total waste in landfill under status quo (58,324 tons) – total waste in landfill under Dart

[Footnote continued on next page]

6. Regarding the market outlook, the Commissioner previously raised a concern about a single buyer for the NYC material, writing in the December 31, 2014 determination "[s]ince the PRI facility would be the only outlet for EPS material from the MGP program, it would be highly risky for DSNY to assume that...the program proposed by Dart would result in the establishment of a market that could be sustained over time..."[5]

7. However, a single buyer is not a condition that makes a market infeasible or unsustainable. Conditions associated with market feasibility and sustainability include market clearing prices, firm revenues that are not less than the cost of production, and prices that do not stimulate changes in behavior by participants and potential participants.[6] When these conditions are met, a market can be sustainable even if there is a single buyer for the product.

8. Single seller and single buyer market structures can produce the same market outcomes as perfectly competitive markets with large numbers of sellers and buyers. The structure under which these outcomes are achieved is known as a contestable market.[7] Contestable markets are defined by certain conditions related to the ease of market entry and exit by potential competitors. Contestability analysis also highlights that market performance is

---

[Footnote continued from previous page]
proposal (40,827 tons) = 17,497 tons. *See* Exhibit E. Moreover, PRI expressed a demand for EPS and PS in excess of the total current waste in landfill (58,324 tons).

[4] Memorandum from BRG to Bridget Anderson, Deputy Commissioner, Recycling and Sustainability, New York City Department of Sanitation (February 24, 2016) at p. 12.

[5] Memorandum from Kathryn Garcia to Bill de Blasio, Melissa Mark-Viverito, and Antonio Reynoso (December 31, 2014) ("Determination"), at p. 3.

[6] *See, e.g.*, Baumol, William, John Panzar and Robert Willig. 1982. *Contestable Markets and the Theory of Industry Structure.* New York, NY: Harcourt Brace Jovanovich, at pp. 24-29.

[7] *See, e.g.*, Baumol, Panzar and Willig 1982.

partially determined by *potential* competition. Previously, I identified dozens of firms that are potential processors for post-consumer EPS foodware as well as firms acting as brokers who support recycling markets by negotiating material prices and setting up the transportation to a buyer.[8] I further understand that a number of firms have indicated a willingness to consider purchasing PRI's output.[9]

9. To understand the market outlook for recycling post-consumer EPS foodware, it is necessary to examine the fundamental driver of the markets for recycled EPS: end-user demand in applications that use EPS and PS. The expected reduced costs of processing post-consumer EPS and expected increases in end-user demand for recycled and virgin EPS and PS provide an economic foundation to recover and recycle EPS foodware. As acknowledged by the Commissioner, "[t]here are buyers for clean EPS."[10] The Dart/PRI Recycling Plan provides a willing buyer with a current technology to clean and process post-consumer EPS foodware into a material that potentially can supply these same end-uses.

10. In the economics of recycling, the concept of *derived demand* is critical for understanding market potential. Derived demand for a material or intermediate service is driven by the demand for another intermediate or final good further down the product chain. Because demand for recovery materials depends on the demand for recycled material and products that use recycled or virgin materials, the sellers of recovery materials face a derived demand. To

---

[8] *See, e.g.*, Northeast Recycling Council, "Marketing Resources for Recycling Industries" (January 2012), at p. 4.

[9] Exs. 2 & 10-15 to Randy Mastro letter to Commissioner Garcia on behalf of Dart and PRI, dated February 24, 2016.

[10] Determination, at p. 5.

investigate derived demand for recycled post-consumer EPS foodware, BRG reviewed third party industry projections for demand growth for EPS and PS from a number of standard industry sources. Although projected rates of growth vary, there is agreement among these sources that demand for EPS is growing. A true and correct copy of this analysis is shown in Exhibit A.

11. In the many applications where recycled EPS can displace virgin EPS and PS, end-user demand will partially be determined by prices for virgin resins and primary materials. According to data from the United States Bureau of Labor Statistics Indices, pricing indices over the 2007 to 2017 period for products made from primary materials indicate that EPS used in food containers has the highest growth rate compared to plastic bottles and plastic materials more generally. In other words, EPS has gotten more expensive, relative to these other plastics. A true and correct copy of this analysis is shown in Exhibit B. Rising or steady prices for primary EPS used in food containers should increase the demand for substitute materials such as recycled EPS for use in non-food products. These conditions would make the recovered EPS materials more valuable and increase the likelihood that new buyers will enter the market.

12. Pricing data for recycled plastics also indicate that the growth in price for recycled EPS pellets compares well to recycled Polyethylene Terephthalate ("PET") and High Density Polyethylene ("HDPE") materials. A true and correct copy of this analysis is shown in Exhibit C. This information supports that despite recent decreases in the price of oil and subsequently, virgin plastic materials, recovered PS continues to show positive growth in prices since 2000. This information provides a sound economic foundation to invest in the recovery and recycling of post-consumer EPS foodware.

The Dart/PRI Recycling Plan Would Save New York City Business and Consumers Tens of Millions of Dollars Per Year

13. The economics of adding a material to an existing recycling system depends on the cost of collection, the cost of material recovery, the revenues from sales of recovered materials, and the disposal costs avoided through the diversion of materials destined for incineration or landfilling, among other factors. In addition, and in this particular matter, the economic analysis must also address the avoided public and private costs of a ban on EPS foodware as well as any forgone benefits from other policy options.

14. Based on a review of the information related to the economics of recycling EPS foodware in NYC, BRG identified a number of factors that are relevant to the choice between recycling EPS foodware inclusive of the Dart/PRI Recycling Plan and banning its use in some applications. A proper policy analysis should compare the consequences for NYC under each of those policy options. Accepting EPS foodware into the recycling system avoids the costs imposed by a product ban. Exhibit D provides a listing of the factors important for the policy decision to ban or accept EPS foodware for recycling, and the value or likely direction of the impact of each policy, including the incremental costs of switching to alternatives to foam, incremental recycling revenues to Sims, and incremental landfill costs.

15. Properly accounting for the replacement costs, weight differentials, and landfill disposal consequences of the ban shows that these costs could be substantial. Accepting post-consumer EPS foodware into the recycling system not only minimizes the landfill burden but also avoids the costs of a ban. Given the cost of alternatives and the landfill implications, the Dart/PRI Recycling Plan results in an economic gain for NYC of more than $56 million per year, the largest component of which is the avoided higher cost of alternatives to consumers. This net benefit, based on avoiding the costs of higher-priced and higher-weight alternatives to EPS

foodware and on revenues received from the recovered commodity materials, is shared by NYC consumers, local businesses, and Sims Municipal Recycling ("Sims").

The Dart/PRI Recycling Plan Would Decrease New York City's Landfill Use

16. The Dart/PRI Recycling Plan has positive implications for recycling beyond post-consumer EPS foodware: it would send less material to landfill than a ban. That is because it affects covered materials which include EPS materials subject to and not subject to the soft foam ban and rigid PS materials. The waste numbers and recovery assumptions of the DSNY analysis can be used to compare the amount of materials to be landfilled under the soft foam ban to the amount under the Dart/PRI Recycling Plan. This comparison shows that under the conditions of the soft foam ban, materials sent to the landfill would be reduced annually by approximately 12,000 tons from approximately 58,500 tons to 46,500 tons. Under the Dart/PRI Recycling Plan, the amount of materials sent to the landfill would be reduced to approximately 40,800 tons. Therefore, the Commissioner's own estimates suggest that the Dart/PRI Recycling Plan would divert approximately 50% more polystyrene from landfills than the soft foam ban. A true and correct copy of this analysis is shown in Exhibit E.

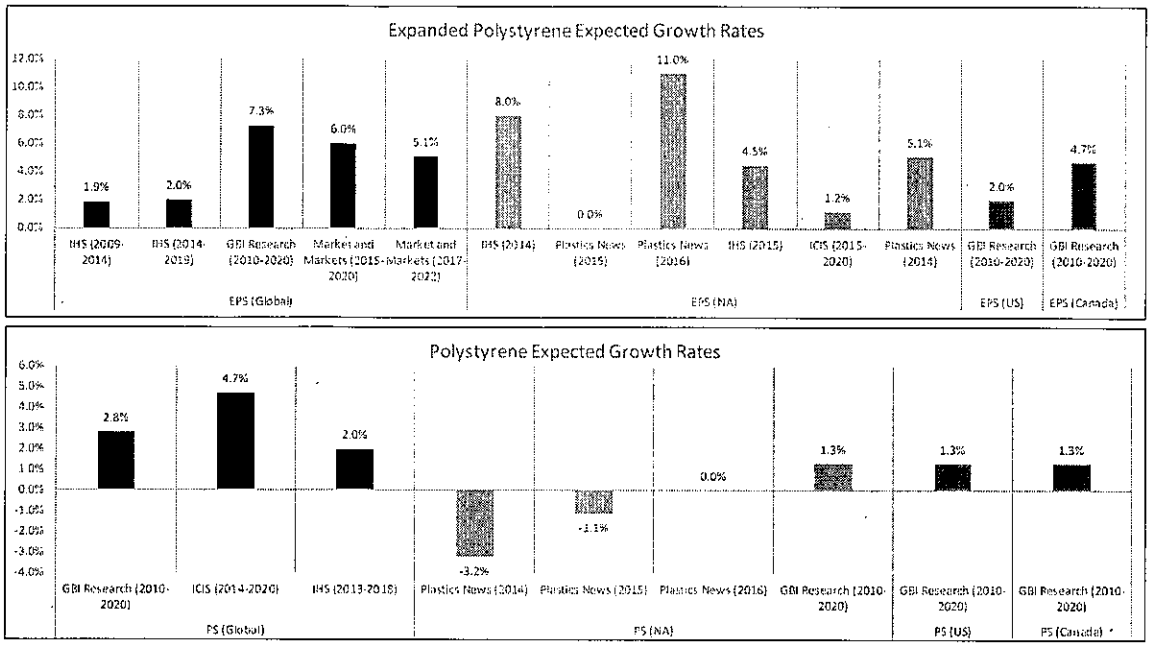
Conclusion

17. Thank you for allowing me to testify about the markets for polystyrene, the economic benefits that New York City would enjoy if the Dart/PRI Recycling Plan is put into effect, and the landfill implications of the Dart/PRI Recycling Plan.

Robin Cantor

May 12, 2017

Exhibit A: Estimates for the Expected Growth Rates of EPS and PS



Sources:

[1] Plastics News (2014)/(2015) Esposito, Frank. "PP sales outperform PS, EPS and PVC in 2015." *Plastics News*. January 28, 2016. Available at: http://www.plasticsnews.com/article/20160128/NEWS/160129791/pp-sales-outperform-ps-eps-and-pvc-in-2015#utm_medium=email&utm_source=pn-daily&utm_campaign=pn-daily-20160128&email_pndaily

[2] IHS (2014)/(2015) Pyzyk, Katie. "The Foam Fight." *Scrap Magazine*. March/April. 2015. p.4. Available at: http://www.isri.org/news-publications/scrap-magazine/all-scrap-articles/the-foam-fight#.VsYzE_krKUk
*IHS estimates the market growth for 2015 as "at least 4-5%"

[3] IHS-(2009-2014)/(2014-2019) *Chemical Economics Handbook -Polystyrene*. IHS. December 2014. Available at: https://www.ihs.com/products/polystyrene-chemical-economics-handbook.html

[4] GBI Research (2010-2020) *Polystyrene (PS) and Expandable Polystyrene (EPS) Global Market to 2020 - Continued Development in the Construction (EPS) and Packaging (PS) End-Use Segments to Accelerate Future Demand*. GBI Research. January 2012.

[5] Market and Markets (2015-2020) *Expanded Polystyrene Market (EPS) - Global Forecast to 2020*. MarketsandMarkets. October 2015. http://www.marketsandmarkets.com/Market-Reports/expanded-polystyrene-market-1138.html

[6] ICIS (2014-2020)/(2015-2020) *Americas Chemicals Outlook 2016*. ICIS. January 2016. pp.20-24.

[7] IHS (2013-2018) Esposito, Frank. "Experts Discuss Status, Future Of PC, ABS, Nylon, PS Markets." *Plastics News*. November 18, 2013. p. 2. Available at:http://www.plasticsnews.com/article/20131118/NEWS/131119930/experts-discuss-markets-for-nylon-polycarbonate-ps-and-abs

[8] Plastics News (2016) Esposito, Frank. "Prices corrected for EPS and TPEs." *Plastics News*. February 23, 2017. Available at: http://www.plasticsnews.com/article/20170223/NEWS/170229940/prices-corrected-for-eps-and-tpes

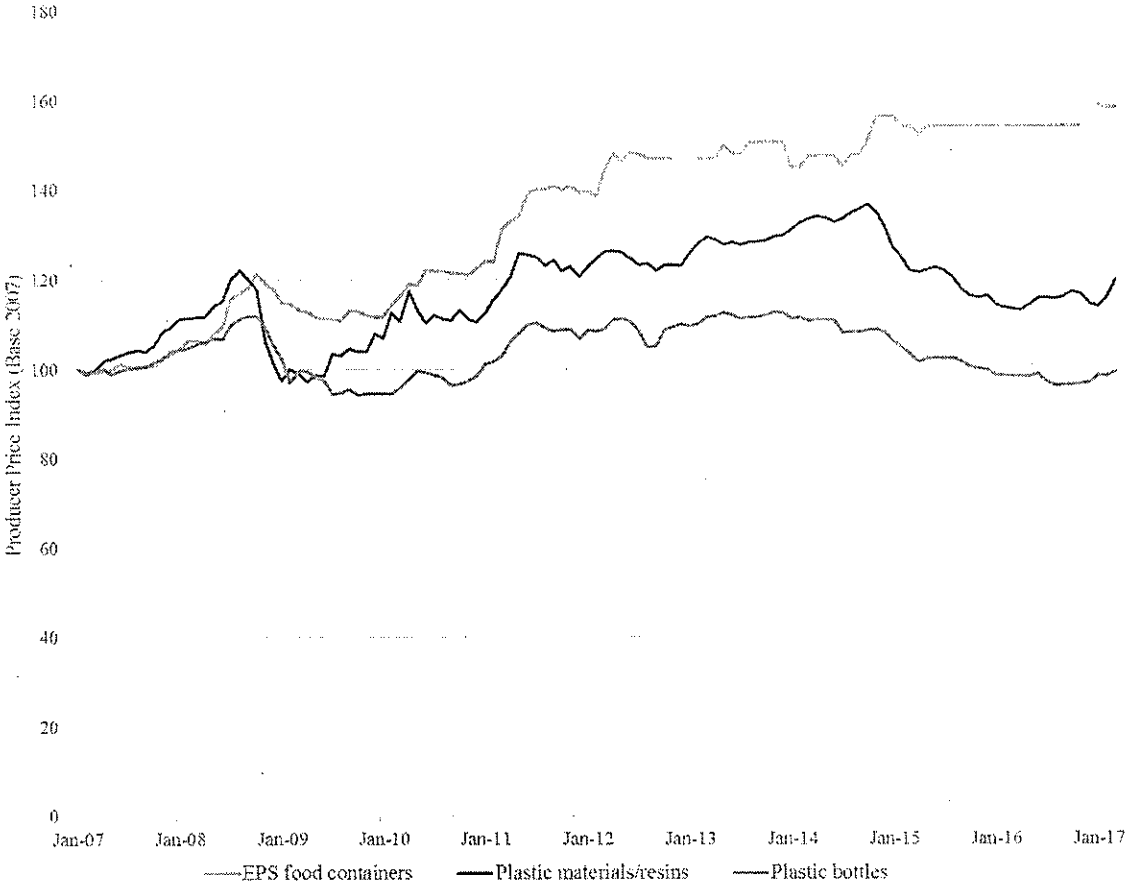
[9] Market and Markets (2017-2022) *Expandable Polystyrene Market by Product Type (White, Grey, Black), Application(Building & Construction, Packaging), and Region (Asia-Pacific, Europe, North America, Middle East & Africa, South America) - Global Forecast to 2022*. Markets and Markets. April 2017.

[10] Plastics News (2016) Esposito, Frank. "Prices rise for ABS, polystyrene and PET." *Plastics News*. March 9, 2017. Available at:http://www.plasticsnews.com/article/20170309/NEWS/170309896/prices-rise-for-abs-polystyrene-and-pet

Note:

Percentages listed from GBI Research and Markets and Markets are referenced as compound annual growth rates (CAGR). Others listed are referenced as expected growth rates per year/or for a specific year.

Exhibit B: Price Indices and Growth for Selected Plastics



Note: Data points were missing for EPS food containers for December 2012, January 2013, and December 2016.
Source: Bureau of Labor Statistics, "Producer Price Index - Industry Data," *available at* https://data.bls.gov/cgi-bin/dsrv?pc (last visited May 8, 2017).

Exhibit C: Price Growth in Selected Recycled Materials

Resin category	Grade	Price growth (Aug 2000 - Jul 2014)[1]	Price growth (Aug 2000 - Sep 2015)[2]
PS	High heat postconsumer pellets	108%	67%
	Industrial pellets	143%	105%
PET bottles	Clear postconsumer pellets	50%	19%
	Green postconsumer pellets	23%	-11%
HDPE	Natural postconsumer pellets	156%	44%
	Mixed colors postconsumer pellets	166%	37%
	Mixed colors industrial pellets	228%	57%

Notes:

[1] Growth is calculated for the period between data points closest to 8/14/2000 and 7/28/2014.

[2] Growth is calculated for the period between data points closest to 8/14/2000 and 9/21/2015, the first and last dates that prices were reported for postconsumer PS in the period.

Source:

PlasticsNews, "Recycled Plastics: Historical Resin Pricing," *available at* http://www.plasticsnews.com/resin/recycled-plastics/historical-pricing (last visited May 8, 2017).

Exhibit D: Comparison of Annual Benefits and Annual Costs for NYC of EPS Foodware Ban and the Dart/PRI Recycling Plan

Analysis Factor	Incremental Revenues/Costs of EPS Foodware Ban + Substitution to Lowest-Cost Alternative	Incremental Revenues/Costs of Dart/PRI Proposal
Incremental Cost to Consumers, Firms, and NYC from Switching to Alternatives	-$51,162,593	$0
Incremental Recycling Revenues to Sims and NYC from EPS/Polystyrene/Alternatives	$600,913[2]	$2,799,552[3]
Risk Adjustment for Uncertain Revenues	-	+
Incremental Landfill Costs from EPS/Polystyrene/Substituted Alternatives	-$1,484,804[4]	$1,927,841[5]
Incremental Collection Costs	U; Depends on change in collection costs due to increased weight of alternatives	$0; NYC not to add routes or trucks.
Incremental Operating and Maintenance Costs	U; Depends on change in operating and maintenance costs due to increased weight and composition of alternatives	$0; Dart to cover $25,000/$35,000 per month increase in operating costs.
Incremental Storage Costs	U; Depends on change in storage costs due to changes in weight or composition of alternatives	$0; Dart to cover storage costs
Incremental NYC Administrative and Other Costs	U	U
Incremental Cost for Organics Recyclers	U; Depends on compostability of alternatives and proportion of contamination of organics from non-compostable materials	U; Depends on contamination of organics from EPS and PS materials
Incremental Landfilled EPS/Rigid Polystyrene/Alternatives Material	13,476 tons	-17,497 tons
Incremental Revenues for Energy Feedstock	Depends on energy content of alternatives and suitability for incineration or gasification	Depends on energy content of EPS and suitability for incineration or gasification

Sources: February 2016 Memorandum from R. Cantor and J. Jordan to B. Anderson; DSM Report dated December 16, 2014, p. 7.

Notes:

[1] - Base case is defined as 40% residential capture rate and 75% and 95% sorting efficiency for EPS and alternatives respectively.

[2] - Change in recycled material (approximately 1,581 tons) times price of $380.00 per ton.

[3] - Change in recycled material (approximately 17,497 tons) times price of $160.00 per ton.

[4] - Change in material landfilled (approximately 13,476 tons) times landfill tipping rate of $110.18 per ton. Assumes alternatives base case. Note that a negative number implies increased costs.

[5] - Change in material landfilled (approximately 17,497 tons) times landfill tipping rate of $110.18 per ton. Assumes EPS base case. Note that a positive number implies decreased costs.

[6] - "U" denotes an undetermined impact, "-" denotes a negative impact, and "+" denotes a positive impact.

Exhibit E: Comparison of Landfill Effects of a Soft Foam Ban and the Dart/PRI Recycling Plan Proposal

Plastic type	Status quo[1]	Ban + no change in other conditions[2]	Dart proposal[3]
EPS (subject to proposed ban) in landfill	11,866 tons	0 tons	8,306 tons
Other EPS waste (not subject to proposed ban) in landfill	16,541 tons	16,541 tons	11,579 tons
Rigid PS in landfill (not subject to proposed ban)	29,917 tons	29,917 tons	20,942 tons
Total waste in landfill	58,324 tons	46,458 tons	40,827 tons

Sources: NYC 2013 Waste Characterization Study; Documents Products by DSNY; NYC FY2014 Refuse and Recycling Report.

Notes:

[1] First two cells are calculated as total waste tonnage * plastic type as a percentage of waste stream. Accounts for the Commissioner's assumption in the Determination that 20% of unlabeled rigid plastics are polystyrene.

[2] The numbers above do not account for the substitution of other plastics for banned EPS.

[3] Waste diverted from landfill based on 30% recycling rate (40% residential capture rate * 75% sorting efficiency).

Attachment A - CV

Curriculum Vitae

BRG
Berkeley Research Group

ROBIN A. CANTOR, PH.D.
BERKELEY RESEARCH GROUP, LLC
1800 M Street NW, Suite 200 | Washington, DC 20036

Direct: 202.448.6729
rcantor@thinkbrg.com

SUMMARY

Dr. Robin Ann Cantor is a managing director in Berkeley Research Group's Washington, DC, office. She has a Ph.D. in economics from Duke University and a B.S. in mathematics from Indiana University of Pennsylvania. Dr. Cantor has more than 30 years of experience in environmental, health, and energy economics, applied economics, statistics, risk management, and insurance claims analysis.

Before joining BRG, Dr. Cantor led practice groups at Exponent, Inc., and Navigant Consulting; and assisted companies and financial institutions with analysis to better understand environmental, health, and other product liability exposures. She has also acted as a principal and managing director of the Environmental and Insurance Claims Practice at LECG, LLC; and program director for Decision, Risk, and Management Sciences, a research program of the National Science Foundation; and held senior research appointments at Oak Ridge National Laboratory.

Dr. Cantor has a faculty appointment in the graduate part-time program in engineering of the Johns Hopkins University. She was president of the Society for Risk Analysis in 2002, and from 2001 to 2003 served as an appointed member of the Research Strategies Advisory Committee of the U.S. Environmental Protection Agency's Science Advisory Board. Dr. Cantor is a fellow of the Society for Risk Analysis and president of the Women's Council on Energy and the Environment. She also serves or has served on science review and advisory boards for the Climate Decision Making Center at Carnegie Mellon University, Johns Hopkins University's graduate part-time program in Environmental Engineering, Science, and Management, the National Center for Environmental Decision Making Research, Carnegie Council for Ethics in International Affairs, National Oceanic and Atmospheric Administration, National Academy of Public Administration, and Center for International Earth Science Information Network.

Dr. Cantor's consulting practice focuses on economics at the interface of science and technology. Many of her projects involve science-based economic analysis used in litigation support, expert testimony, risk assessment, and other advisory services addressing energy, environmental, and health issues Dr. Cantor's testimonial experience includes analysis of market share theories of product liability, fair market compensation in eminent domain matters, healthcare reimbursement, economic damages, product liability estimation in bankruptcy matters and insurance disputes, asbestos settlements, premises and product claims, cost contribution allocation in Superfund disputes, derailment risks, reliability of statistical models and estimation methods, and class certification issues.

Dr. Cantor has prepared expert reports that address economic issues in healthcare and energy markets, antitrust, commercial practices and contracts, intellectual property, employment discrimination, false advertising, regulation, and other areas of product and market analysis. Dr. Cantor has submitted analysis, testimony, and affidavits in federal arbitration, regulatory and Congressional proceedings, and

state and federal courts. Her publications include refereed journal articles, book chapters, expert reports, reports for federal sponsors, a book on economic exchange under alternative institutional and resource conditions, and an edited book on product liability published by the American Bar Association.

EDUCATION

Ph.D., Economics	Duke University, 1985
B.S., Mathematics	Indiana University of Pennsylvania, 1978

PREVIOUS POSITIONS

Principal Scientist, Exponent, Inc. 2008–2013

Managing Director, Navigant, 2004–2008

Lecturer, Graduate Program, Johns Hopkins University, Engineering and Applied Science Programs for
Professionals, Program in Environmental Engineering, Science and Management, 1996–present

Principal and Managing Director, LECG, 1999–2004

Senior Managing Economist, LECG, 1999

Managing Economist, LECG, 1996–1998

Member, U.S. Environmental Protection Agency, Science Advisory Board, Research Strategies Advisory Committee, 2001–2003

Program Director, Decision, Risk, and Management Science, National Science Foundation, 1992–1996

Coordinator, NSF Human Dimensions of Global Change, 1992–1996

Project Manager, Oak Ridge National Laboratory, 1990–1991

Technical Assistant to the Associate Director, Advanced Energy Systems, Oak Ridge National Laboratory, 1989–1990

Group Leader, Social Choice and Risk Analysis Group, Energy and Economic Analysis Section, Oak Ridge National Laboratory, June 1987–1989

Research Staff, Energy and Economic Analysis Section, Oak Ridge National Laboratory, Oak Ridge National Laboratory, October 1982–1987

Consultant, Indonesian Energy Project, Harvard Institute for International Development, July 1987

Visiting instructor, North Carolina Central University, Spring 1982

PROFESSIONAL HONORS

Who's Who Legal: Insurance & Reinsurance Expert Witnesses 2015, 2016
President, Women's Council on Energy and the Environment, 2015, 2016
Fellow, Society for Risk Analysis, 2002
President, Society for Risk Analysis, 2002
YWCA Tribute to Women Award for Business and Industry, 1990
Society for Risk Analysis Presidential Recognition Award, 2008
Society for Risk Analysis Outstanding Service Award, 1999
NSF Director's Award for Superior Accomplishment, 1996
NSF Special Act Award, 1995
NSF Director's Award for Program Officer Excellence, 1994
Oak Ridge National Laboratory Significant R&D Accomplishment Award, 1993
Martin Marietta Special Achievement Award, 1990
Martin Marietta Special Achievement Award, 1989
Martin Marietta Energy Systems Significant Event Award, 1988
C.B. Hoover Scholar, 1980–1981
Mellon Fellowship, 1978–1981

PUBLICATIONS

Cantor, R. et al., *Amicus Curiae* brief submitted to the U.S. Supreme Court in the matter of *Tyson Foods, Inc. v. Bouaphakeo et al.* (No. 14-1146), September 29, 2015.

Cantor, R., Jordan, J. NYC ban on polystyrene foam misses a market opportunity. Law360, June 01, 2015.

Cantor R, Cross P, Lau E, Schmier J. Bias in relative accuracy metrics. Proceedings, 1st Annual World Conference of the Society for Industrial and Systems Engineering. Fernandez JE, Santos DL, Subramanian A, Schmeidler N, Ware BR, Kumar AR (eds), Washington, DC, 2012:45-50.

Cantor, RA. Product Liability. In: Leadership in Science and Technology: A Reference Handbook. Bainbridge WS (ed), Sage Publications Inc: Thousand Oaks, CA, 2012:281–288.

Menzie C, Cantor R, Boehm P. Business planning for climate change: Identifying vulnerabilities and planning for changes in water, temperature, sea level, natural resources, health effects, and extreme events. Environmental Claims Journal 2011; 23(3–4):190–198.

Cantor RA (ed.). Product Liability. ABA Publishing: Chicago IL, 2011.

Cantor RA, Lyman M, Reiss R. Asbestos claims and litigation. In: Product Liability. Cantor RA (ed), ABA Publishing: Chicago IL, 2011:125–145.

Review Committee (Cantor RA – member). Review of the Department of Homeland Security's approach to risk analysis. National Research Council, The National Academies Press: Washington, D.C., 2010.

Cantor RA, Gunaseelan P, Vopelius J, Bandza A. Creating and financing the next-generation carbon offset project: An application to carbon capture and storage. In: Energy and Environmental Project Finance Law and Taxation: New Investment Techniques. Kramer AS, Fusaro PC (eds), Oxford University Press, 2010:15–38.

Cantor RA, Lyman M, Reiss R. Asbestos claims and litigation. John Liner Rev 2009; 23(2): 28–38.

Cantor RA, Hlavin A, Katofsky R, McDonald C. Current perspectives on trading environmental attributes. In: Energy and Environmental Trading: U.S. Law and Taxation. Kramer A, Fusaro P (eds), Cameron May, 2008; 183–235.

Cantor RA. Enterprise risk management perspectives on risk governance. In: Global Risk Governance: Concept and Practice using the IRGC Framework. Renn O, Walker K (eds), Springer Press, 2008: 87–91.

Nieberding J, Cantor RA. Price dispersion and class certification in antitrust cases: An economic analysis. J Legal Econ 2007; 14(2):61–84.

Bunting C, Renn O, Florin M-V, Cantor RA. Introduction to the IRGC risk governance framework. John Liner Rev 2007; 21(2):7–26.

Cantor RA, Lyman M. Asbestos and state tort reforms. John Liner Rev 2007; 20(4):39–45.

Cantor RA, Cook M, Lyman M. Is the end in sight? Global Reinsurance 2006; September, 45–46.

Cantor RA, Cook M, Lyman M. After the FAIR Act. Run Off Business 2006; 17:34–36.

Cantor RA, Cook M. A chink in the FAIR Act. Global Reinsurance 2006; April, 9.

Morgan MG, Cantor RA, Clark B, Fisher A, Jacoby J, Janetos T, Kinzing, Melillo J, Street R, Wilbanks T. Learning from the U.S. national assessment of climate change impacts. Environ Sci Technol 2005; October.

Nieberding J, Cantor RA. Price dispersion, the "Bogosian Short Cut," and class certification in antitrust cases. ABA Antitrust Law, Economics Committee Newsletter 2004; 4(1):5–9. Also reprinted in Texas Business Litigation 2005; 23–25.

Zimmerman R, Cantor RA. State of the art and new directions in risk assessment and risk management: Fundamental issues of measurement and management. In: Risk Analysis and Society: An Interdisciplinary Characterization of the Field. McDaniels TL, Small MJ (eds), Cambridge University Press, 2004.

Cantor RA. Introduction to the 2001 best paper special issue. Risk Anal 2003; 23(6):1209–1210.

Adams GD, Cantor RA. Risk, stigma, and property values: What are people afraid of? pp. 175–186. In: Risk, Media and Stigma. Flynn J, Kunreuther H, Slovic P (eds), pp. 175–186, Earthscan Publications, Ltd., 2001.

Cantor RA, Rayner S, Henry S. Markets, distribution & exchange after societal cataclysm, Books for Business, December 2000.

Cantor RA. Discussion paper on net environmental benefits assessment for restoration projects after oil spills, or some reflections on the decision process. pp. 145–152. In: Restoration of Lost Human Uses of the Environment. Cecil G (ed), SETAC Press, 1999.

Cantor RA, Yohe G. Economic analysis. pp. 1–93. In: Human Choice and Climate Change: An International Assessment, Volume 3: Tools for Policy Analysis. Rayner S, Malone EL (eds), Battelle Press, 1998.

Cantor RA (contributor), Jaeger CC, Renn O, Rosa EA, Webler T, McDonell G, Sergen G (eds.) Decision analysis. pp. 141–2216. In: Human Choice and Climate Change: An International Social Science Assessment State of the Art Report, Volume 3. Rayner S, Malone EL (eds), Battelle Press, 1998.

Cantor RA. Rethinking risk management in the federal government. Ann Am Acad Political Social Sci 1996; 545:135–143.

Cantor RA. Estimating externalities of coal fuel cycles, Lee R (ed.), Report 3, Utility Data Institute, McGraw-Hill, Washington, DC, 1994.

Cantor RA, Rayner S. Changing perceptions of vulnerability. In: Industrial Ecology and Global Change. Socolow R, Andrews C, Berkhout F, Thomas V (eds), Cambridge University Press, 1994.

Cantor RA, Schoepfle M. Risk, rationality, and community: Psychology, ethnography, and transactions in the risk management process. The Environmental Professional 1993; 15:293–303.

Cantor RA, Henry S, Rayner S. Making markets: An interdisciplinary perspective on economic exchange, Greenwood Press, Delaware, 1992.

Fulkerson W, Jones J, Delene J, Perry AM, Cantor RA. The potential role of nuclear power in controlling CO2 emissions. In: Limiting the Greenhouse Effect: Options for Controlling Atmospheric CO2 Accumulation. Pearman GI (ed), John Wiley and Sons, 1992.

Cantor RA, Schoepfle M, Szarleta E. Sources and consequences of hypothetical bias in economic analysis of risk behavior. In: The Analysis, Communication, and Perception of Risk. Garrick BJ, Gekler WC (eds), Plenum Press, New York, 1991.

Cantor RA. Applying construction lessons to decommissioning estimates. Energy J 1991; 12:105–117.

Cantor RA, Rizy C. Biomass energy: Exploring the risks of commercialization in the United States of America. Bioresource Technol 1991; 35(1):1–13.

Cantor RA, Krupnick A, Rizy C. Beyond the market: Recent regulatory responses to the externalities of energy production. pp. 51–61. Proceedings, 1991 Conference of the National Association of Environmental Professionals, 1991.

Cantor RA, Rayner S. Thinking the unthinkable: Preparing for global disaster. In: New Risk: Issues in Management. Ricci P (ed), Plenum Press, New York, 1990.

Cantor RA, Jones D, Lieby P, Rayner S. Policies to encourage private sector responses to potential climate change. In: Energy Markets in the 1990s and Beyond. Finizza A, Weyant JP (eds), IAEE, Washington, DC, 1989.

Cantor RA, Hewlett J. The economics of nuclear power: Some new evidence on learning, economies of scale, and cost estimation. Resources Energy 1988; 10:315–335.

Rayner S, Cantor RA. Quand le risque acceptable est-it socialement justifie. In : La Societé Vulnerable, Fabiani J-L, Theys J (eds), Presses De L'École Normale Supérieure, Paris, 1987.

Cantor RA, Rayner S, Braid RB. The role of liability preferences in societal technology choices: Results of a pilot study. In: Risk Assessment and Management. Lave L (ed), Plenum Press, New York, 1987.

Rayner S, Cantor RA. How fair is safe enough? The cultural approach to societal technology choice. Risk Anal 1987; 7(1):3–9.

Cantor RA, Rayner S. The fairness hypothesis and managing the risks of societal technology choices. ASME, paper 86-WA/TS-5, December 1986.

Cantor RA. Regulatory trends and practices related to nuclear reactor decommissioning. In: The Energy Industries in Transition 1985–2000. Weyant JP, Sheffield DB (eds), IAEE, Washington, DC, 1984.

OTHER PUBLICATIONS

Cantor R, Bremser A. Market share liability from an economics perspective. The BRG Review 2014; 4(1): 4-9.

Shifrin N, Cantor R. The Safety of Chemical Products. The BRG Review 2014; 4(1): 10-16.

Cantor R, Menzie C. Seeing the forest through the trees: NRD and dynamic ecosystems. ABA Toxic Torts and Environmental Law Committee Newsletter; 2012; Winter.

Cantor RA, Patrick B. Commercialization of nanotechnology: Enterprise risk management issues. Background Paper presented to the ABA Section of Environment, Energy, and Resources Nanotechnology Panel, 36th Annual Conference on Environmental Law, Keystone, CO, March 8–11, 2007.

Cantor RA, Zimmerman R. First World Congress on Risk "Risk and Governance" conference highlights. Risk Newsletter 2003; 23(4):1–10.

Cantor RA. Risk analysis in an interconnected world. RISK Newsletter 2001; 21(3):1–3.

Cantor RA, Zimmerman R. Risk and governance: An international symposium. RISK Newsletter 2001; 21(1):20–21.

Cantor RA. Book review of Public Reactions to Nuclear Waste by Riley E. Dunlap, Michael E. Kraft, and Eugene A. Rosa. Science 1994; 266:145.

Cantor RA. News from Washington. Human Dimensions Quarterly 1994; 1(2):20–21.

Cantor RA. Book review of The Risk Professionals by Thomas M. Dietz and Robert W. Rycroft. Environmental Professional 1989; 11(4):458–459.

Cantor RA. Decommissioning: The Next chapter in the nuclear saga. FORUM 1988; 3(3):105–106.

TECHNICAL MANUSCRIPTS

Cantor R, Berman E, Jordan J. Assessment of Economic Impacts of the Proposed Hawai'i Dairy Farms Facility, July 2016.

Menzie C, Cantor R, Boehm P, Bailey JR. An approach to business vulnerability and risk assessments related to climate change. SPE Paper Number SPE-127083-PP, November, 2009.

Analysis of the Estimated Production Cost Savings from Replacing the Dollar Note with the Dollar Coin. Final report of analysis submitted to Congressional Record, June 12, 2000 (with Jessica B. Horewitz and Robert N. Yerman).

Rebuttal Verified Statement with Gordon C. Rausser for CSX Corporation and CSX Transportation, Inc., Norfolk Southern Corp., and Norfolk Southern Railway Co., Control and Operating Leases/Agreements, Conrail Inc. and Consolidated Rail Corp., Railroad Control Application, Applicants' Rebuttal Vol. 2B of 3, December, 1997.

Community Preferences and Superfund Responsibilities. Prepared for the USEPA under Interagency Agreement 1824-B067-A1 with Oak Ridge National Laboratory, August 1993.

The U.S.-EC Fuel Cycle Study: Background Document to the Approach and Issues. Oak Ridge National Laboratory, ORNL/TM-2500, November, 1992 (with L. W. Barnthouse, D. Burtraw (Resources for the Future), G. F. Cada, C. E. Easterly, A. M. Freeman (Bowdoin College), W. Harrington (Resources for the Future), T.D. Jones, R. L. Kroodsma, A. J. Krupnick (Resources for the Future), R. Lee, H. Smith (DOE), A. Schaffhauser, and R. S. Turner).

What are the Problems of Equity and Legitimacy Facing a Management Strategy for the Global Commons? Managing the Global Commons: Decision Making and Conflict Resolution in

Response to Climate Change, Oak Ridge National Laboratory, ORNL/TM-11619, July, 1990 (with Roger Kasperson in Steve Rayner, Wolfgang Naegeli, and Patricia Lund).

Markets, Distribution, and Exchange after Societal Cataclysm, Oak Ridge National Laboratory, ORNL-6384, November 1989 (with S. Rayner and S. Henry).

Information. Chapter 5 of A Compendium of Options for Government Policy to Encourage Private Sector Responses to Potential Climate Change, DOE/EH-0102, Report to Congress, October, 1989 (with G. G. Stevenson and P. J. Sullivan).

Agriculture and Forestry. Chapter 10 of A Compendium of Options for Government Policy to Encourage Private Sector Responses to Potential Climate Change, DOE/EH-0102, Report to Congress, October, 1989 (with W. Naegeli and A. F. Turhollow, Jr.).

Evaluation of Implementation, Enforcement and Compliance Issues of the Bonneville Model Conservation Standards Program, Vol. I and II, ORNL/CON-263, July 1989 (with Steve Cohn).

Gas Furnace Purchases: A Study of Consumer Decision Making and Conservation Investments. ORNL/TM-10727, October 1988 (with David Trumble).

An Analysis of Nuclear Power Plant Construction Costs. DOE/EIA-0485, 1986 (with J. G. Hewlett and C. G. Rizy).

Nuclear Reactor Decommissioning: A Review of the Regulatory Environments. ORNL/TM-9638, 1986.

Nuclear Power Options Viability Study, Vol. I, Executive Summary, ORNL/TM-9780/1, 1986 (with D. B. Trauger et al.).

Nuclear Power Options Viability Study, Vol III, Nuclear Discipline Topics. ORNL/TM-9780/3, 1986 (with D. B. Trauger et al.).

Clinch River Breeder Reactor: An Assessment of Need for Power and Regulatory Issues, ORNL/TM-8892, September 1983 (with D. M. Hamblin et al.).

SELECTED PRESENTATIONS

Cantor R, Cross P, Mackoul C. Challenges to product labeling: Consumer protection or opportunism? Society for Risk Analysis, 2016 Annual Meeting, San Diego, CA, December 11–14, 2016.

Cantor R, The role of the economist, ABA Section on Antitrust Law, Seminar and Teleconference, Class Action Fundamentals for Antitrust Litigators, Washington, DC, May 5, 2016.

Cantor R, Meer, S, Tyler, C. What drives physician testing for pain medication compliance—risk or reward? Society for Risk Analysis, 2014 Annual Meeting, Denver, CO, December 7–11, 2014.

Schmier J, Cross P, Cantor R, Lau E, Steffey D, Watson W. Bias in relative accuracy metrics. International Poster Presentation at the Society of Pharmacoeconomics and Outcomes Research 18th Annual International Meeting, New Orleans, LA, May 18–22, 2013.

Cantor RA. Entrepreneurship vs. Philanthropy: What drives women in the workplace? Women's Council on Energy and the Environment, Brown-bag Luncheon, Washington, DC, February 21, 2013.

Cantor RA. The Future of Energy Policy in America. Public Leadership Education Network, Women & Science & Technology Seminar, Washington, DC, January 8, 2013.

Cantor R, Schmier J, Hulme-Lowe C, Meer S. What will it really cost? Hidden indirect costs and countervailing risks in regulatory impact assessment. Society for Risk Analysis, 2012 Annual Meeting, San Francisco, CA, December 9–12, 2012.

Cantor R, Schmier J, Levine J. Climate change and human health: A sleeping giant? Society for Risk Analysis World Congress on Risk 2012: Risk and Development in a Changing World. Sydney, Australia, July 18–20, 2012.

Cantor R, Meer S. Product liability: An overview of the emerging issues. Society for Risk Analysis World Congress on Risk 2012: Risk and Development in a Changing World, Sydney, Australia, July 18–20, 2012.

Cantor RA, Menzie CA, Bremser AW, Deardorff TL, Hulme-Lowe CK, Wickwire WT. Seeing the forest through the trees: NRD and dynamic ecosystems. Poster Presentation at the Society for Risk Analysis, 2011 Annual Meeting, Charleston, SC, December 4–7, 2011.

Cantor RA. Evaluating vulnerabilities and identifying emerging risks. Invited presentation, The Conference Board EHS Legal Counsel Meeting, Houston TX, January 15–16, 2009.

Cantor RA. Using exposure science to ascertain asbestos liabilities. Invited CLE presentation, Business Valuation Resources, LLC Teleconference, November 18, 2008.

Cantor RA. Weather and temperature: Emerging health issues for US companies. REBEX 2008, Wheeling IL, October 23–24, 2008.

Cantor RA. Asbestos risk transfers: Unlocking value by walling off asbestos liabilities. Invited CLE session at Willkie Farr & Gallagher, New York, NY, June 4, 2008.

Cantor RA. The future of asbestos—New techniques for unlocking value by selling liabilities to investors. Mealey's™ Teleconference, March 25, 2008.

Cantor RA. Update on other U.S. long-tailed product liabilities. Invited presentation, 4th International Asbestos Claims & Liabilities Conference: The Practical Guide to Litigating, Settling and Managing Asbestos Claims, London, January 30-31, 2008.

Cantor RA. Tax or cap: What are the real differences for carbon policy in the US? Invited session and presentation, McDermott Will & Emery 10th Annual Energy Conference, Washington DC, October 9-10, 2007.

Cantor RA. Managing nanotechnology's life cycle risks responsibly. Invited ALI-ABA teleconference, June 27, 2007.

Cantor RA. Carbon emissions—Planning for the change. Invited teleconference, Environmental Law Network, June 15, 2007.

Cantor RA. Liability estimation and the historical future. Invited presentation, Mealey's™ Asbestos Bankruptcy Conference, Chicago, IL, June 7-8, 2007.

Cantor RA. Renewables and the value proposition for carbon credits. Invited presentation, McDermott Will & Emery 9th Annual Energy Conference, Washington DC, October 19-20, 2006.

Cantor RA. The ABCs of the value proposition for carbon credits. Invited presentation, the Environmental Trading Congress, New York, NY, July 24-25, 2006.

Cantor RA, Lyman M. Liability estimation in U.S. bankruptcy cases. London Underwriting Centre, London, UK, January 10, 2006.

Cantor RA, Lyman M. The status of the FAIR Act. London Underwriting Centre, London, UK, January 10, 2006.

Cantor RA. Economic appraisal of ecological assets. Invited presentation, U.S. Environmental Protection Agency Science Advisory Board "Science and the Human Side of Environmental Protection" Series, Washington, DC, July 6, 2002.

Cantor RA. Scientists and Homeland Security—The relevance of risk analysis. Invited presentation, Council of Scientific Society Presidents, Washington, DC, May 2002.

Cantor RA. NRD rules and economics. Invited presentation, Environmental and Admiralty Law Committees of the Association of the Bar of the City of New York, December 7, 2000.

Cantor RA. Revealed preferences and environmental risks: Lessons learned from two policy debates. Annual Meetings of the Society For Risk Analysis, Phoenix, AZ, December 8, 1998.

Cantor RA. Valuing environmental impacts: Lessons learned from the natural resource damage debate. Invited Paper, Society of Environmental Toxicology and Chemistry, 19th Annual Meeting, November 19, 1998.

Cantor RA. How will climate change affect economics and politics? Invited panel speaker, Policy and Politics of Climate Change, ABA Section of Natural Resources, Energy, and Environmental Law Fall Meeting, October 8, 1998.

Cantor RA. Natural resource damage rules: A search for the path of least resistance in value disputes? George Washington University Seminar Series on Environmental Values and Strategies, September 1997.

Cantor RA. Rethinking the science of risk management: Changing paradigms of the process and function. Operations and Information Management Department Workshop, Wharton School of the University of Pennsylvania, November 1995.

Cantor RA, Arkes H. Interdisciplinary perspectives on experimental methods. 1995 Meetings of the American Economic Association, January 1995.

Cantor RA. Risk management: Four different views. Invited presentation, The Conservation of Great Plains Ecosystems Symposium, April 1993.

Cantor RA. Human dimensions of global change: A white paper on the USGCRP research programs. National Academy of Sciences Board on Global Change, November 1993.

Cantor RA, Rayner S. Changing perceptions of vulnerability. Invited paper, NCAR/UCAR Summer Institute on Industrial Ecology and Global Change, July 17-31, 1992.

Cantor RA. Should economic considerations limit the conservatism of risk assessment? Invited paper, Workshop of the International Society of Regulatory Toxicology and Pharmacology on Risk Assessment and OMB's Report on its Application in Regulatory Agencies, Washington, DC, June 11, 1991.

Cantor RA. Beyond the market: Recent regulatory responses to the externalities of energy production. Annual Meetings of the National Association of Environmental Professionals, Baltimore, MD, April 30, 1991.

Cantor RA. Understanding community preferences at Superfund sites. National Meeting of EPA Community Relations Coordinators, Chicago, IL, April 4-6, 1990.

Cantor RA. Methodological myths and modeling markets: A common framework for analyzing exchange. Second Annual International Conference on Socio-Economics, Washington, DC, March 1990.

Cantor RA, Schoepfle GM, Szarleta EJ. Sources and consequences of hypothetical bias in economic analyses of risk behavior. 1989 Meetings of Society for Risk Analysis, October 1989.

Cantor RA, Jones D, Lieby P, Rayner S. Policies to encourage private sector responses to potential climate change. 1989 Meetings of International Association of Energy Economists, October 1989.

Cantor RA, Szarleta EJ. The experimental approach in public policy analysis: precepts and possibilities. Public Choice Society and Economic Science Association Annual Meetings, Orlando, FL, March 17-19, 1989.

Cantor RA, Rayner S. Global disaster management: Developing principles for research. 1988 Meetings of the Association for Public Policy Analysis and Management, October 1988.

Cantor RA. Implementation and enforcement issues from early adopter experience. Regional Evaluation Network, Northwest Power Planning Council, Portland, OR, June 1988.

Cantor RA. Using information from toxic-tort litigation to value the health and safety consequences of regulatory decisions. Public Policy Workshop, the Department of Economics and Waste Management Research and Education Institute, University of Tennessee, Knoxville, TN, February 1988.

Cantor RA, Bishop R, Jr. Valuing safety and health effects in regulatory decisions: A revealed-preference approach. 1987 Annual Meeting of the Society for Risk Analysis, November 3, 1987.

Cantor RA. Government intervention and technology prices: The CANDU example. Invited paper, WATTEC Conference, Knoxville, TN, February 19, 1987.

Cantor RA. Fairness hypothesis and managing the risks of societal technology choices. 1986 Winter Annual Meeting of the American Society of Mechanical Engineers, Anaheim, CA, December 10-12, 1986.

Cantor RA. A retrospective analysis of technological risk: The case of nuclear power. Invited paper, Center of Resource and Environmental Policy Workshop Series, Vanderbilt University, Nashville, TN, December 4, 1986.

Cantor RA, Petrich C, Mercier J-R. Evaluation of a large-scale charcoal project in Madagascar: Attacking the deforestation problem from the supply side. 1986 IAEE North American Conference, Cambridge, MA, November 19-21, 1986.

Cantor RA, Rayner S. Tools for the job: Choosing appropriate strategies for risk management. 1986 Annual Meeting of the Society for Risk Analysis, Boston, MA, November 9-12, 1986.

Cantor RA, Rayner S. Thinking the unthinkable: Preparing for global disaster. 1986 Annual Meeting of the Society for Risk Analysis, Boston, MA, November 9-12, 1986.

Cantor RA, Rayner S, Braid B. The role of liability preferences in societal technology choices: Results of a pilot study. 1985 Annual Meetings of Society for Risk Analysis, Washington, DC, October 8, 1985.

CONFERENCE PARTICIPATION

Chair, Finance Committee "Fourth World Congress on Risk," Singapore, July 2015.

Invited panelist for "An Integrated Risk Framework for Gigawatt-Scale Deployments of Renewable Energy: The Wind Energy Case Study," 2009 Annual Meeting for the Society for Risk Analysis, Baltimore, MD, December 9, 2009.

Invited session organizer and panelist for "Global Warming and Greenhouse Gas Controls: What do they mean for you?" 2008 Annual Meeting of the National Association of Publicly Traded Partnerships, Washington DC, June 26, 2008.

Co-chair, "Second World Congress on Risk," Guadalajara, Mexico, June 2008.

Invited panelist for "Climate Litigation: The Next Asbestos or the Next Y2K?" ABA Section of Litigation Annual Conference, Washington DC, April 17, 2008.

Invited panelist for "Business of Mitigation: Carbon Offsets and Trading," Oxford University Capstone Conference, Oxford, UK, September 10, 2007.

Panelist for "Issues Concerning Implementation," at the Public Forum on OMB's Proposed Risk Assessment Bulletin: Implications for Practice Inside and Outside Government, sponsored by Society for Risk Analysis, Society of Environmental Toxicology and Chemistry in North America, Society of Toxicology, and International Society of Regulatory Toxicology and Pharmacology.

Session Chair, "Challenges Facing Industrial Countries," with key-note speeches by Philippe Busquin, EU Commissioner for Research, and Dr. John Graham, Administrator of the US Office of Information and Regulatory Affairs, Inaugural Conference of the International Risk Governance Council, Geneva, Switzerland, June 29, 2004.

Co-Chair, "First World Congress on Risk," Brussels, Belgium, June 2003.

Chair of the Organizing Committee, 2001 Annual Meetings for the Society for Risk Analysis.

Member of the Organizing Committee, Risk and Governance Symposium, Society for Risk Analysis, June 2000.

Organizing Committee Member for the 1996, 1997, 1998, and 2002 Annual Meetings of the Society for Risk Analysis.

Panelist for Net Environmental Benefits Assessment for Restoration Projects after Oil Spills, Conference on Restoration for Lost Human Uses of the Environment, Washington, DC, May 1997.

Session Organizer and Chair for Cost Benefit Analysis and Risk Assessment at the 1996 Annual Meeting of the Society for Risk Analysis.

Panelist for Challenges in Risk Assessment and Risk Management sponsored by The Annenberg Public Policy Center of the University of Pennsylvania at the National Press Club, Washington, DC, May 16, 1996.

Panelist for Media and Risk in a Democracy: Who Decides What Hazards Are Acceptable? At the 1995 Annual convention of the Association for Education in Journalism and Mass Communication.

Session Organizer and Co-Chair for Experimental Methods: Insights from Economics and Psychology at the 1995 Meetings of the American Economic Association.

U.S. Organizer for the Third Japan-U.S. Workshop on Global Change Modeling and Assessment: Improving Methodologies and Strategies, Hawaii, October 1994.

Cluster Organizer for three sessions on Competitiveness at the Fall Meeting of the Operations Research Society of America/The Institute of Management Sciences, 1994.

Roundtable Panelist for Risk Communication Research: Defining Practitioner Needs at the 1994 Meetings of the Society for Risk Analysis.

Workshop Organizer for Organizational Transformation and Quality Systems, National Science Foundation, 1993.

Session Chair and Organizer for the NSF/Private Sector Research Initiative Projects at the 1992 Meetings of the Society for Risk Analysis.

Roundtable Panelist for the EPA Session on Risk Communication at the 1990 Meetings of the Society for Risk Analysis.

Session Chair and Organizer for the Computer Assisted Market Institutions Session at the Advanced Computing for the Social Sciences Conference, April 1990.

Discussant for the Issues in LDC Public Finance Session at the 1988 Meetings of the American Economic Association.

Session Chair and Organizer for Social Science Innovations in Risk-Analysis Methods, Special Session at the 1988 Meetings of the Society for Risk Analysis.

ADVISORY AND OTHER APPOINTMENTS

Advisory Board Member, Climate and Energy Decision Making Center, Carnegie Mellon University, June 2011-present

National Research Council Committee to Review the Department of Homeland Security's Approach to Risk Analysis, November, 2008–2010

Member, Advisory Group for the Joint Global Change Research Institute, a collaboration between Pacific Northwest National Laboratory and the University of Maryland, 2004–2008

Member, Planning Committee for a study to evaluate the U.S. National Assessment of the Potential Consequences of Climate Variability and Change, coordinated through Carnegie Mellon University, 2004

Neutral technical panelist working with Arbitrator Anthony Sinicropi on negotiation issues related to the pilots' compensation contract. Retained by US Airways and the Air Line Pilots Association (ALPA), 2001 and 2002

Advisory Board Member, Johns Hopkins University Graduate Part-Time Program in Environmental Engineering and Science, 2000–2004

Planning Committee Member, Carnegie Council on Ethics and International Affairs Long Term Study of Culture, Social Welfare, and Environmental Values in the U.S., China, India, and Japan, initiated January 1997

Vice-Chair, U.S. Global Change Research Program working group on Assessment Tools and Policy Sciences, 1994–1996

US Federal Reviewer for the Intergovernmental Panel on Climate Change working group III 1995 Report on Socioeconomics

NSF Principal for the Committee on the Environment and Natural Resources' Subcommittee on Risk Assessment, 1993–1996. Also served as the liaison between the Subcommittee on Risk Assessment and the Subcommittee on Social and Economic Sciences

Advisory panel member for Environmental Ethics and Risk Management, National Academy of Public Administration and George Washington University, 1993–1994

Science Advisory Board member for Consortium for International Earth Science Information Network, 1993

Review Panel member for Economics and the Value of Information, NOAA, 1993

NSF technical representative to the FCCSET Ad Hoc Working Group on Risk Assessment and member of its Subcommittee on Risk Assessment, 1992–1993

NSF representative to Working Party of the FCCSET Subcommittee for Global Change Research on Assessment, 1992–1993

Affirmative Action Representative for the Energy Division, Oak Ridge National Laboratory 1984–1989, AA Rep for the Central Management Organization of ORNL, October 1989 to November 1990

Board of Directors, Vice President (1987–1988), President (1988–1989), Matrix Organization, The Business Center for Women and Minorities, Knoxville, TN

EDITORSHIPS AND EDITORIAL REVIEW BOARDS

Editorial Board, Journal of Risk Analysis, 1997–2012

Editorial Board, Journal of Risk Research, 1997–2005

PEER REVIEWER

The Energy Journal, Climate Change, Contemporary Economic Policy, Growth and Change, Ecological Applications, Risk Analysis, Duke University Press, Princeton University Press, J. of Environmental Economics and Management, Resources and Energy, The Environmental Professional, Journal of Risk Research, National Science Foundation, National Oceanic and Atmospheric Administration, FORUM, U.S. Environmental Protection Agency

PROFESSIONAL AFFILIATIONS

American Economic Association

Women's Council on Energy and the Environment
- President, 2015-present
- Vice President, 2011-2014
- Secretary, 2007-2010
- Board Member, 2004-2006

Society for Risk Analysis
- Councilor, 2013
- President, 2002
- President-Elect, 2001
- Councilor, 1996–1999

American Bar Association

Exponent
420 Lexington Avenue
Suite 1740
New York, NY 10170

telephone 212-895-8100
facsimile 212-895-8199
www.exponent.com

Testimony

of

William Goodfellow

Environmental Effectiveness of Expanded Polystyrene Foam (EPS) Recycling

May 12, 2017

1. Qualifications

I, William Goodfellow, BCES, am a Principal Scientist and Director for Exponent in the EcoSciences practice. I have a Master of Science (M.S.), with research focusing on assessing ecological and environmental impacts and environmental toxicology. I am a Board-Certified Environmental Scientist (BCES, No. 13-60004) recognized by the American Academy of Environmental Engineers and Scientists (AAEES) and a Fellow of the Society of Environmental Toxicology and Chemistry (SETAC), an international professional society. The SETAC Fellow Award was created as a means of recognizing the long-term and significant scientific and science policy contributions of the society's members. SETAC Fellows are recognized for their excellence and contributions in the professional and scientific arenas. I am also a past President of SETAC North America as well as past President of the SETAC World Council, which represents nearly 6,000 members from approximately 100 countries. SETAC along with the United Nations Environment Programme (UNEP) have formed a working partnership relationship in developing and implementing strategies for the Life Cycle Assessments (LCA). One of my responsibilities as a member of the Executive Committee and President of the SETAC World Council was to have fiduciary responsibility in the UNEP/SETAC partnership and be an active participant in committee meetings held by UNEP and SETAC on LCA.

I have over 30 years of experience in identifying specific environmental issues, determining causation of observed environmental impacts, and assessing potential impacts from proposed environmental projects. I have led numerous projects that involved comparisons among products in the steel, chemical, polymer/plastic, and pulp paper industries and their associated waste streams, production processes, assessment of engineering technologies, implementing business and product marketing strategies, and other actions with environmental consequences.

2. Background

2.1. Introduction

EPS single-serve food containers have desirable properties that are highly valued in commercial and retail industries, especially for prepared meals. EPS protects food from moisture and has high thermal insulation capacity; therefore, EPS single-serve food containers are sanitary and help prevent food from spoilage.[1] EPS single-serve food containers are routinely recycled in other parts of the United States, Canada, and other countries.

Globally, the increase in solid waste is an urgent problem that needs a solution.[2] New York City is targeting "zero waste" to landfills by 2030,[3] which will involve both a reduction in consumption and an expanded recycling program.

To understand the environmental impact of recycling EPS single-serve food containers, I reviewed existing literature and performed calculations to assess the overall impact of EPS recycling. This written testimony summarizes my findings.

2.2. Comparison using EPS and paper as models

To describe the environmental impact of recycling EPS single-serve food containers, I prepared a white paper examining the resource requirements of producing virgin and recycled products. I also used paper products as an alternative, to compare the environmental impacts of EPS and its most likely substitute. In the white paper, we focus on energy requirements, like fossil-fuel use, because energy consumption is a critical measure of total environmental impact. For example, if you use more energy, you are probably releasing more greenhouse gases and causing more pollution.

2.2.1. Benefits of using EPS compared to paper as a single serve product

First, we looked at the energy it takes to make a foam cup as compared to a paper cup, which offers the opportunity to assess variables of two products with a similar use. We found that it takes almost three times as much energy to make a paper cup, which means that banning EPS or forcing the use of alternatives would increase total energy use in the manufacturing industry.

---

[1] Zabaniotou, A., and E. Kassidi. "Life cycle assessment applied to egg packaging made from polystyrene and recycled paper." Journal of Cleaner Production 11.5 (2003): 549–559.

[2] Ellen MacArthur Foundation. 2017. The New Plastics Economy: Catalysing action. https://www.ellenmacarthurfoundation.org/publications/new-plastics-economy-catalysing-action

[3] http://www1.nyc.gov/html/onenyc/visions/sustainability/goal-2-sustain.html

Based on that, if reducing energy consumption is a goal, then a ban on foam is an environmentally harmful solution.

EPS is 95% air or more and has a light per-unit volume. In contrast, paper is denser than EPS, weighing much more per unit of volume.[4] Using cups as an example, a paper cup is more than four times heavier than an EPS cup (Table 1). The low density of EPS is advantageous when transporting products and raw materials. While EPS is approximately 1.6 times more energy-intensive to produce when evaluated on a mass basis, it is nearly 2.8 times more energy efficient to produce an EPS cup on a per unit basis (Table 1).

Whether as constituents or fuel, a variety of materials are used to produce a product like a disposable paper cup or EPS cup. Total quantity of energy can be sorted in two categories. The first category is the irrecoverable energy expended during production such as transportation and processing of materials. The second category is the energy retained in the finished product that could potentially be recovered by recycling it or combusting it in a waste-to-energy facility.

If substantial enough, the second category of energy could be worth recovering. The relative benefit of recycling is greater for materials with higher recoverable energy. Most importantly, recycling also reduces the amount of waste sent to landfills and energy recovery facilities. Overall, recycling saves energy and reduces greenhouse gas emissions.

Table 1. Energy requirement and mass of uncoated paper cups and EPS cups (molded polystyrene foam cups) (Source: Table 1 from Hocking 1994)

Cup type	Mass range (g)	Mass per cup in calculation (g)	Energy requirement per gram (kJ/g)	Energy requirement per cup (kJ/cup)
Uncoated paper	6.3-10.2	8.3	66.2	549
EPS	1.4-2.4	1.9	104.3	198

2.3. Recycling of EPS

Recycling starts with separation of materials into paper and commingled recyclable materials at the source and collection of these materials at the curbside.[5] Once commingled recyclable materials arrive at a Material Recovery Facility (MRF), they are sorted by composition. In New York City, source-separated materials are trucked to the Sunset Park MRF in Brooklyn, New York, and to the Claremont Recycling Center in Jersey City, New Jersey, both of which are

[4] Hocking MB. 1994. Reusable and disposable cups: An energy-based evaluation. Environmental Management 18(6):889–99.

[5] U.S. Environmental Protection Agency (USEPA). 1991. Material recovery facilities for municipal solid waste.

operated by Sims Municipal Recycling. Sims Municipal Recycling ships sorted recyclable materials to buyers by barge, rail, and truck, while non-recyclable materials are sent to contracted landfills.[6]

Under Dart Corporation's proposal, Sims Municipal Recycling will be equipped with an optical sorter manufactured by Pellenc Selective Technologies of France.[7] Mixed rigid and foam polystyrene materials collected by Sims would be shipped by rail to PRI in Indianapolis, Indiana. PRI is equipped to produce raw feedstock (beads of plastic), which is then sold to a range of customers that produce consumables such as tape dispensers, cash register rolls, and packaging foams.

PRI has a rigorous procedure in place to dispose of wastes generated during recycling. PRI has its own water treatment system. Solids from PRI waste water are composed of paper (e.g., bottle labels) and dirt, which are disposed of at a landfill. PRI ultimately discharges waste water to a publicly owned treatment works (POTW) as a significant industrial user. Water is tested routinely as required by POTWs, and no major issue associated with waterborne pollution has been observed.

PRI's recycling process requires 521.1 kilowatt-hours (kWh)/short ton of energy (or 889 BTU/lb) and 6,000 gallons of water per hour to recycle EPS. This is a worst-case scenario for winter months when more than half of the energy cost goes to heat the building. The actual energy requirement for recycling is likely lower than this worst-case scenario.

3. Opinion 1. EPS can be recycled in an environmentally responsible and effective manner.

Second, we looked at the energy required to recycle EPS single-serve food containers. We found that it takes less energy to recycle EPS products than it does to produce new EPS products from virgin material. This means that recycling is preferable to not recycling, in terms of total environmental impact. We also found that recycling processes continue to get more efficient, which increases the potential gains from a recycling program.

3.1. There is positive energy savings by recycling EPS

Sexton (2016)[8] stated that recycling of EPS single-serve food containers is not environmentally effective or practical. By contrast, a study published in 2006 indicates that recycling of EPS single-serve food containers is net positive.[9] The analysis of energy flows shows that recycling

---

6 PlaNYC. 2013. Sustainability and solid waste: Doubling NYC's diversion rate by 2017.

7 See http://www.pellencst.com/products/

8 Sexton B. Letter to Eric Goldstein, Natural Resource Defense Council, dated February 24, 2016.

9 Franklin Associates, Ltd. 2006. Final peer-reviewed report. Life cycle inventory of polystyrene foam, bleached paperboard, and corrugated paperboard foodservice products.

2% of EPS materials once reduces total energy consumption to produce polystyrene feedstock by about 0.5% compared to manufacturing feedstock with 100% virgin material. Since 2006, recycling has become more energy efficient. In fact, this 2006 study considered that three times more energy than the current PRI process will be consumed to recycle EPS. Thus, the results from this 2006 study would be considered conservative versus current conditions.

3.2. Energy consumed and carbon emitted to recycle EPS are both less than shipping EPS to landfills.

We looked specifically at the recycling proposal made by Dart and PRI. In doing that, we found that the major energy inputs required to recycle EPS single-serve products are the transport energy to ship EPS to the recycling facility and the process energy used to convert EPS to polystyrene feedstock. In terms of comparison, the transport energy has the lion's share of the importance. Given Dart's proposal to transport recyclable materials by rail, it is likely that the total energy expenditure will be roughly equal the energy expended to transport it to landfill. That coupled with the benefits of reducing overall materials being sent to the landfill and creating products from recycling that are sought after by consumers; recycling of products such as EPS is advantageous both from a carbon footprint and landfill space standpoint.

There is not much public information on the City's handling of waste, but at least some waste is transported down the Eastern seaboard to locations approximately 600 miles away. The PRI facility is roughly the same distance away, about 700 miles.

I calculated the energy requirement and carbon dioxide emission to transport EPS to either PRI (approximately 700 miles from New York City) or landfill (approximately 600 miles from New York City)[10] (Table 2). Under Dart's current proposal to transport EPS to PRI via rail, I calculate that energy consumption and carbon dioxide emissions will be greater for the status quo[11] scenario compared to shipping 30% of EPS single-serve products to PRI for recycling. Furthermore, relative to the recoverable energy associated with EPS itself (net material energy), the energy to transport materials to PRI and process EPS single-serve materials to polystyrene feedstock is much less (Figure 1). Because this energy can be recaptured for use in recycled materials and helps to avoid the need for new virgin manufacturing, transporting materials to PRI to process EPS single-serve materials is not negative but rather an environmentally positive process.

In short, if recyclable EPS is transported to PRI by rail, it will have roughly the same energy-consumption impact as sending it to landfill. To the extent that the City sends some of its waste to landfills via truck, the balance tips decidedly in favor of recycling under the Dart proposal.

---

[10] I assumed that refuse is sent by rail to the Lee County Landfill in Bishopville, South Carolina, located approximately 600 miles from New York City (Google Earth).

[11] I assumed that 50% of refuse is sent to landfill is sent by rails and 50 % by trucks for the status quo scenario due to limited information available.

Table 2. Energy consumption and carbon dioxide emission to transport EPS single-serve materials from New York City to PRI recycling facility and landfill

		Mode of transport	Weight of EPS (short tons)	Carbon dioxide emitted to transport (short ton carbon dioxide)
Dart proposal	30% of EPS single-serve items to PRI	100% rail	3,560	76.9
	70% of EPS single-serve items to landfill	100% truck	8,306	769
	70% of EPS single-serve items to landfill	50% truck, 50% rail	8,306	462
	70% of EPS single-serve items to landfill	100% rail	8,306	156
Status quo	100% of EPS single-serve items to landfill	100% truck	11,866	1,098
	100% of EPS single-serve items to landfill	50% truck, 50% rail	11,866	660
	100% of EPS single-serve items to landfill	100% rail	11,866	222

We assume that EPS will be recycled at the rate of 30%, based on the City's projections as analyzed by Robin Cantor of the Berkeley Research Group;[12] therefore, 3,560 tons of EPS single-serve materials will be sent to the recycling facility.

[12] Cantor, R. July 9, 2015. Affidavit of Robin Cantor in the matter of the application of Restaurant Action Alliance NYC et al. v. The City of New York, et al. Index No. 100734/2015.

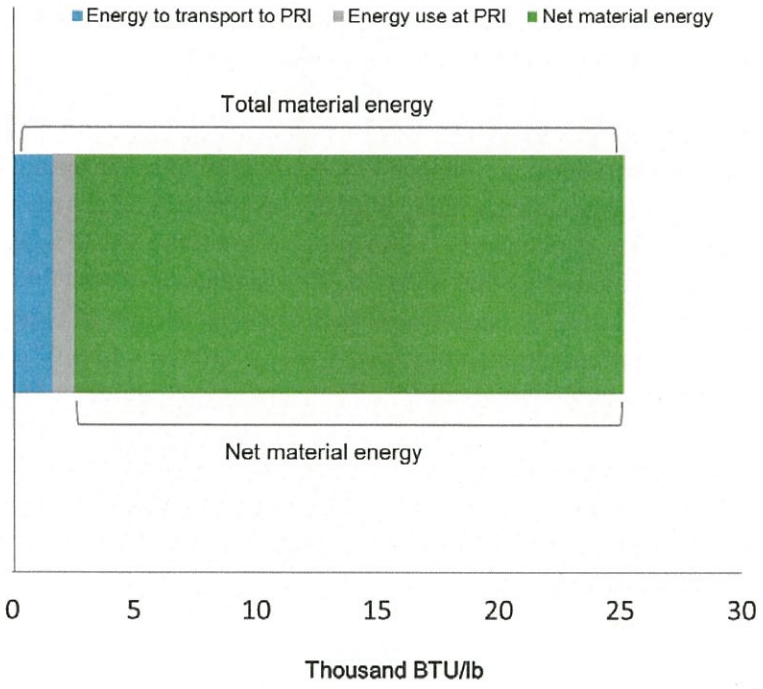


Figure 1. Total material energy of EPS and energy requirement to transport and process EPS single-serve materials

Net material energy (total material energy *minus* [energy to transport *plus* energy used at PRI]) indicates that recycling EPS single-serve materials is a net positive.

4. Opinion 2. Continued use of EPS single-serve containers and responsible recycling offers DSNY an environmentally beneficial and practical opportunity to continue pursuit of the 2030 "zero waste" goal. To achieve its "zero waste" goal by 2030, DSNY needs to continue to pursue strategies of waste elimination, waste reduction, and recycling.

The advantages of recycling EPS are further heightened when one takes into account the most likely alternatives. If the City were to ban EPS, for example, consumers would be very likely to increase their use of relatively heavier paper products. Like EPS, these products will need to be transported to recycling facilities or landfills after use, at the expense of higher energy consumption on a per-unit basis. Switching from EPS single-serve products to paper would emit at least 2.5 times more carbon dioxides to transport.

If EPS single-serve containers are discontinued, paper will likely replace them in New York City. Because paper is heavier than EPS, more energy will be required to transport the City's waste. And since this transport energy is predominantly derived from fossil fuels, more carbon dioxide will be emitted to dispose of waste on a per-unit basis.

I calculated the energy consumption and carbon dioxide emissions for a hypothetical scenario in which EPS single-serve products are replaced by paper products. Currently, it is believed that most used paper single-serve containers are not recycled; therefore, for the purpose of this estimation, I assumed that all paper-based single-serve container waste is hypothetically shipped to a landfill. My analysis indicates that replacing EPS single-serve containers with paper will be environmentally costly (Table 3). Largely due to the heavier weight of paper compared to EPS, more energy will be required to transport paper waste, greater amounts of carbon dioxide will be emitted, and paper waste will fill up landfills if not sent to a composting facility.

Currently, there appears to be only limited recycling of paper single-serve products, so recycling EPS will avoid the use of energy to ship paper single-serve products to landfills. DSNY should strongly consider the recycling of EPS single-serve products as a method to reduce and ultimately eliminate waste to landfills.

Table 3. Energy consumption and carbon dioxide emission to transport paper single-serve materials from New York City to landfill

Scenario	Mode of transport	Weight of paper equivalent to EPS (short tons)	Carbon dioxide emitted to transport (short ton carbon dioxide)
30% of EPS single-serve products replaced by paper alternatives, which are sent to landfill	100% truck	10,063	931
	50% truck, 50% rail	10,063	560
	100% rail	10,063	189
100% of EPS single-serve products replaced by paper alternatives, which are sent to landfill	100% truck	33,544	3,105
	50% truck, 50% rail	33,544	1,867
	100% rail	33,544	628

EDF
ENVIRONMENTAL DEFENSE FUND*
Finding the ways that work

Testimony before the Committee on Sanitation and Solid Waste

on Int. 1480 regarding

designating expanded polystyrene as a recyclable

Rory Christian, Director, New York Clean Energy Program at EDF

Isabelle Silverman, Esq.

May 12, 2017

Good afternoon, Chair Person Reynoso and Council Members, thank you for the opportunity to testify today.

My name is Isabelle Silverman and I am delivering this testimony as a volunteer on behalf of Environmental Defense Fund (EDF). Rory Christian, Director, New York Clean Energy at EDF was unable to deliver this testimony today which is why I will read it into the record. I was a Senior Attorney at EDF for almost 10 years.

Environmental Defense Fund (EDF), is a not-for-profit, non-partisan, international environmental organization with headquarters in New York City. With over two million members, more than 35,000 of which are New York City residents, we work to advance market-based policy to address the world's greatest environmental challenges.

Should NYC move forward with Int. 1480, it would be the first, and only, large U.S. city to invest in the recycling of Expanded Polystyrene (hereinafter "EPS").

EDF has a fair amount of history with this issue. In the 1990s, EDF partnered with McDonald's, which was under pressure to reduce waste produced behind the counter and in their packaging. The Styrofoam or EPS "clam shells" were ending up on streets, in parks, in waterways, and in landfills, creating significant public concern. EDF performed in-depth analysis on McDonald's operations, and one of the key recommendations was to transition from EPS "clamshells" to paper-based wraps for its sandwich packaging. This recommendation alone provided a 70-90% reduction in sandwich packaging volume, reducing landfill space consumed, energy used and pollutant released over the lifecycle of the package.

Not only were there environmental benefits, but McDonald's saves an estimated $6 million per year as a result of these packaging changes. In the decade following the partnership, McDonald's has eliminated over 300 million pounds of packaging, recycled one million tons of corrugated boxes, and reduced restaurant waste by 30%. These savings don't include the cumulative savings from the entire fast food industry, as other large chains followed McDonald's lead, moving away from EPS packaging.

EDF
ENVIRONMENTAL
DEFENSE FUND
Finding the ways that work

Unlike other environmental firsts, like the elimination of No. 6 Oil, mandating the recycling of EPS may ultimately hinder New York's environmental goals.

EDF is strongly opposed to Int. 1480 and we expand upon our reasons below.

1. Significant Health and Environmental Downsides of EPS

Our health and environment are significantly affected by EPS. For one, polystyrene can take hundreds of years to decompose, and is generally considered non-biodegradable. Cities such as San Francisco; Berkeley; Oakland; San Jose; Portland; Oregon and Freeport, Maine have already banned polystyrene food containers from being used within city limits due to these concerns. While an increasing number of cities are choosing this route, and banning polystyrene altogether, requiring New Yorkers to recycle this substance seems counter to established best practices already adopted by other major cities.

If EPS ends up in our oceans and waterways, as waste too often does, it can be hazardous to birds and fish, which inadvertently ingest EPS particles. This jeopardizes our ecosystems, which we depend on to live safe and healthy lives.

The use of polystyrene, EPS, must be addressed, but we do not believe that this bill is the best way to address it.

2. Economic Feasibility of Expanded Polystyrene Recycling

Beyond the environmental concerns, from a business perspective recycling of EPS isn't economically feasible. Given that recycled materials are generally purchased by weight and EPS is very light, EPS waste generates little revenue relative to hauling costs. Even if recycling was subsidized by the polystyrene industry (or taxpayers) and therefore more economical for municipalities, the problem is that there are not enough markets for the recycled product. As a result, no other large city in the U.S. has invested in an EPS recycling program.

Over one hundred municipalities have addressed concerns with EPS with bans for certain types of EPS. Earlier this month, Albany County, New York adopted legislation banning food service EPS. The market for dirty recycled EPS is extremely limited. So limited, that there are not enough uses for recycled EPS, then why even bother pretending that we should recycle EPS? Virgin EPS is readily abundant and cheaper than recycled EPS, so if there was a need for EPS, it's simple enough to buy virgin EPS.

In December 2014, the Department of Sanitation (DSNY) Commissioner Kathryn Garcia concluded that there are "currently no established markets to purchase and recycle the EPS that would be collected in the MGP program. The end product is considered too "dirty" by current buyers."[i] Similarly, former Sanitation Commissioner Brendan Sexton concluded, in a report on recyclability of EPS from an economic and feasibility standpoint, that "the concept of recycling

EDF
ENVIRONMENTAL
DEFENSE FUND
Finding the ways that work

dirty plastic foam from the residential or food-contact waste stream is simply not a reality in the NYC area."[ii]

In addition, even though rigid plastics were recently added as recyclable materials, recycling rates in New York City are, overall, still quite low - with just over 16% in 2017.[iii] New York City should focus efforts on encouraging recycling where markets for the recycled materials exist, instead of adding on a material that has no such opportunity in New York City, and could potentially cause great harm to our people and our environment.

3. Conclusion

New York City is a leader on so many environmental issues, many of which EDF has worked on with both the Council and the de Blasio administration. With the citywide goal of zero waste being sent to landfills by 2030, aggressive action must be taken. This, however, is not an action that will advance us toward this Zero Waste goal.

Instead of polystyrene recycling, the Council should focus on increasing recycling rates in neighborhoods across the city, performing outreach and education about what can and cannot be recycled, and increasing composting citywide. These commonsense efforts are already underway, and would benefit from increased support from the Council, instead of this effort, which takes us further from our goals.

Thank you very much for your attention.

---

[i] Letter from DSNY Commissioner to Mayor de Blasio, Speaker Mark-Viverito and Committee Chair Raynoso, dated December 31, 2014.
http://www1.nyc.gov/assets/dsny/downloads/pdf/about/laws/Polystyrene_foam_determination_LL142_2013.pdf

[ii] https://www.nrdc.org/experts/eric-goldstein/battle-over-polystyrene-waste-foaming-nyc-council

[iii] Preliminary's Mayor's Management Report, February 2017
http://www1.nyc.gov/assets/operations/downloads/pdf/pmmr2017/2017_pmmr.pdf

TESTIMONY of Cafeteria Culture
City Council Committee on Sanitation and Solid Waste Management
Hearing on Intro 1480, Friday May 12, 2017

Chair, Committee Members and staff, thank you for allowing me this opportunity to speak in opposition to Intro 1480 and in support of the bill to ban polystyrene.

I am the Executive Director and Founder of Cafeteria Culture, a non-profit environmental education organization, originally called Styrofoam Out of Schools. We work creatively to achieve zero waste schools and climate smart communities. We engage students as our partners in change, merging citizen science and civic action with media and arts education. This year, Cafeteria Culture received a competitive grant from the US Environmental Protection Agency for our *Community Arts+Media for Trash Free Waters* program. Our students in 3 low-income communities are taking the lead to reduce local plastic street litter that becomes deadly global marine pollution by conducting litter surveys and outreach.

In 2009, we partnered with the Department of Education SchoolFood Directors, catalyzing the complete elimination of 860,000 polystyrene foam trays used daily in New York City public schools. This effort led to a unique co-purchasing agreement between NYC and the five other largest urban school districts, resulting in the elimination of half a *billion* polystyrene trays per year from landfills, incinerators, and student meals.

This decision of NYC SchoolFood Directors was not based on environmental concerns alone. Health considerations were key motivations with a goal to serve healthy school meals to New York City's 1.1 million students on safe food service ware.

A polystyrene tray recycling program with 100 NYC schools was tested in 2008-09. The program failed, just as similar programs have failed in cities across the US. **Polystyrene food containers must be clean to be recycled.** Now, DART says they will experiment, right here in NYC, and try to find some new method to make this work. This is a terrible idea.[1]

A push to recycle toxic and polluting polystyrene is a backwards push and an environmental justice disgrace, driven by corporate greed. Polystyrene is an outdated and extremely harmful material that is contaminating our oceans, our wildlife and our bodies.

You may be surprised to learn that as a part of the recent "New Plastics Economy" report produced by the World Economic Forum and the Ellen MacArthur Foundation, leaders of 15 global brands—including Dow Chemical, Coca-Cola, L'Oreal, Unilever, and Procter & Gamble —recommended that polystyrene products be phased out. (https://newplasticseconomy.org)

The polystyrene industry claims that a ban will hurt low income communities, yet it is those low income New Yorkers who are more likely to be regularly eating hot foods in toxic styrene containers, perhaps even microwaving food in polystyrene. Many families may not be informed about the dangers of styrene leaching into hot food and may not know that microwaving food in polystyrene is not advisable and hazardous.

---

[1] The Environmental Protection Agency ranks Styrofoam manufacturing as the fifth worst global industry in terms of hazardous waste creation.

Contact: Debby Lee Cohen, Director/Founder DL@cafeteriaculture.org 917-282-0253
A Project of Fund for the City of New York, 121 Avenue of the Americas, 6th floor, NY, NY 10013

But the leaching of styrene into our *oceans*, contaminating our seafood web, may be the greatest concern and the primary reason to ban toxic and polluting styrene foam. Nobody needs a degree in chemistry to grasp how easily polystyrene foam breaks down into pieces. You can witness it all over our beaches and our streets.

Polystyrene breaks down into tiny toxic *microplastics*, harming wildlife and poisoning our food web. Microplastics mimic plankton, an important food source for fish and seabirds. They also act like sponges, absorbing toxins commonly found in polluted waters, like PCBs, pesticides and flame retardants, carrying those additional toxins with them.

Plankton eating plastic (polystyrene) caught on camera for the first time, captured under a microscope at the UK-based Plymouth Marine Laboratory, shows copepods consuming—and accumulating—fluorescent polystyrene beads measuring 7 to 30 micrometers in diameter.

Plankton typically eat algae, but **with 8 million metric tons of plastic being dumped into our oceans annually, these creatures in our food web are eating microplastics, laden with other toxins.**

"For humans, all we know at this point is that there is no doubt we are eating plastic when we eat seafood. Studies have shown plastic debris in shellfish, fish and even sea salt. So, yes, we need more research to answer questions about how plastic debris may impact food security (i.e. fish stocks) and food safety." - Dr Chelsea Rochman, Ecotoxicologist, Huffington Post, Jan, 2016

Beach litter is full of polystyrene foam. Polystyrene is consistently reported as one of the top 10 items of debris recovered from shorelines and beaches worldwide (Ocean Conservancy, 2016). **NYC is no exception.**


Jamaica Bay Wildlife Refuge, April 2017

"As experts in children's environmental health, we know that what we do to the environment, we ultimately do to ourselves and to our children. Products like polystyrene create pollution where they are produced, where they are discarded, and inside our bodies. They dirty our air, contaminate our water, and get into the food chain. Because polystyrene threatens human health and cannot be practically recycled, we support a polystyrene ban."
Dr. Perry Elizabeth Sheffield, MD, MPH,
Deputy Director, Mount Sinai School of Medicine
Departments of Pediatrics and Preventive Medicine

Nobody should be eating or drinking from containers made of styrene, not our kids, not our parents, and not our neighbors! The market is full of safe and affordable alternatives.

I urge you to vote against Intro 1480 and to take this incredible opportunity to elevate our city as a leader in environmentally smart policy, inspiring other cities, who will surely follow.

Debby Lee Cohen
- Director and Founder, Cafeteria Culture (a partner project of Fund for the City of New York)
- Member of the Manhattan Solid Waste Advisory Board
- Trash Free Waters Partnership NY/NJ - Steering Group Lead

Contact: Debby Lee Cohen, Director/Founder DL@cafeteriaculture.org 917-282-0253
A Project of Fund for the City of New York, 121 Avenue of the Americas, 6th floor, NY, NY 10013

The Business Council

Testimony to

The New York City Council

Int 1480-2017

Presented by

Name: Darren Suarez
Title: Director Of Government Affairs

May 12, 2017

Good afternoon, let me start by thanking the members of this Committee for holding such an important hearing. I'm Daren Suarez of The Business Council of New York State, to express our support for Intro 1480 – progressive legislation that would establish curbside collection of polystyrene foam for recycling.

The Business Council is the leading business organization in New York State, representing the interests of businesses statewide. Over 75 percent of our members are small businesses, many of which are located right here in New York City.

For decades, the restaurant industry has been a driving force in New York's entrepreneurial economy - generating tremendous revenue for the city and state and creating jobs that build futures for families from all communities. In 2014, restaurants contributed more than $35 billion to the state and employed about 9% of our overall workforce.

But more and more we're hearing from small business owners, especially restaurant owners that the sheer costs of doing business here – from increasing labor costs, rising regulations and the costs of goods – are making it harder and harder for small businesses to survive. Over the past year, the restaurant industry saw a 6% decline.

The Business Council believes that working together we can help small employers who mean so much to our economy and address environmental concerns. And that is why we support Intro 1480.

As you are aware Intro 1480 will amend the administrative code of the city of New York, to designating expanded polystyrene as recyclable. Recent success in New York State proves that recycling foam products can work.

Madison County in upstate New York in 2016 began a pilot foam recycling program. Under the program the Madison County Department of Solid Waste Department of Solid Waste has collected foam and then densified the foam. After a successful start to the program the Madison County Department of Solid Waste announced it will continue with its Styrofoam recycling program for the foreseeable future. Madison County has demonstrated that once densified, foam becomes a valuable commodity and can be marketed by the truckload. Recycling Coordinator Mary Bartlett was recently quoted as saying "It can be a money maker too. I have been quoted anywhere from 18 to 38 cents a pound." compared to a penny a pound for textiles.

In conclusion, s20mall restaurant owners have testified today that polystyrene foam is the lifeblood of how they operate. We know that for many restaurants, their take out business could be as high as high

as 60-percent. Foam is a low-cost package that allows these restaurants to serve their customers. Consumers enjoy the benefits of sturdy and strong polystyrene food containers and polystyrene packaging insulates extremely well to maintain food temperature, which can reduce food waste due to spoilage or damage and packaging leakage. The US Food and Drug Administration, which regulates the safety of food contact packaging, has approved the use of polystyrenes since 1958, and so to have governments around the world.

Members of the business community are committed to the development of polystyrene recycling program, such as the one that Intro 1480 establishes – which works for New York City's finances, and our restaurants bottom lines.

Today, you have heard from numerous experts and small and large businesses that Intro 1480 would create a critical program to help businesses here. The Business Council is adding its voice to the call for action. We urge you to pass this legislation promptly.

DS

EPS Industry Alliance

1298 Cronson Boulevard
Suite 201
Crofton, MD 21114
phone 800.607.3772
fax 410.451.8343
info@epsindustry.org
www.epsindustry.org

Innovative solutions for a sustainable future

May 12, 2017

Re: Int. No. 1480-2017

City Council Committee on Sanitation and Solid Waste Management
City Hall
250 Broadway
Committee Room, 14th Floor
New York, New York 1007

Dear Committee Members:

The EPS Industry Alliance (EPS-IA) appreciates the opportunity to support Int. No. 1480-2017, a local law to amend the administrative code for the city of New York, in relation to designating expanded polystyrene as recyclable and repealing sections 16-324 (f) and 16-329 of the administrative code of the city of New York. EPS-IA is a national trade association representing expanded polystyrene (EPS) protective packaging manufacturers. We request this Committee consider that EPS is fully recyclable. As you deliberate the proposed bill, there are several important points to consider:

Expanded polystyrene is 100% recyclable
As a material, expanded polystyrene is homogenous. That is a significant attribute for recycling. It means that the material does not require fractioning or distillation. There is no film or coating that must be melted down, no chemical or physical stripping of non-recyclable components, no separate processing of dissimilar substances and no portion that must be land-filled.

EPS recycling efforts can be jeopardized if product bans are adopted. Although polystyrene foam packaging is a miniscule portion of the solid waste stream – less than one percent (0.7%) by volume nationwide[2] and 0.8% in New York City[3] – the industry is continually striving to increase its recycling efforts. Recognizing that EPS recycling poses logistical and economic challenges, in 2012 more than 90 million pounds of post-consumer and post-commercial EPS transport packaging were recycled[1].Despite misconceptions about its recyclability, the EPS industry has achieved an average post-consumer recycling rate of 14% for the past twenty-five years. The industry is now in the process of establishing partnerships with several Fortune 500 companies on EPS recycling initiatives that would result in higher collection rates. While product bans do not guarantee decreased environmental impacts, it is likely one would hinder the EPS industry's progress to facilitate increased recycling.

Product bans are not in alignment with zero waste.
Material substitution does not guarantee waste elimination. Nor does it ensure the alternative materials will be better for the environment — meaning these potential consequences would be at the expense of other communities. While it is popular to ban polystyrene, it is not the right thing to do for the environment. We urge you to set a good example of environmental responsibility and take a deeper look at unbiased, reliable information sources. Employing high level sustainability and environmental stewardship will deliver truly beneficial changes that are backed up by science, sound math and comprehensive life cycle analysis.

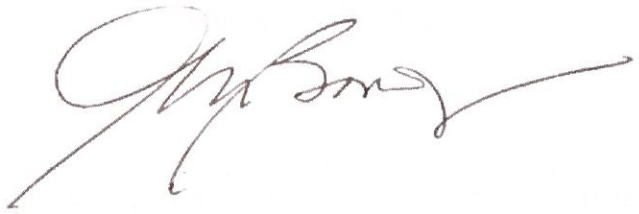
All packaging materials – whether paper, plastic or reusable containers – have an environmental impact. The belief that paper is always better than plastic is not a scientific fact, but rather a misconception about how plastic products are made, how landfills work, the incidence of plastic litter and an inherent belief that all non-biodegradable products negatively impact the planet. Research has proven that paper production typically consumes more production energy, has a higher carbon footprint and generates significantly more waste than plastic, even when recycling is taken into account[2].

EPS-IA has a long-term commitment from its member companies to promote and support viable recycling opportunities and to provide recycled-content packaging to its customer base. We provide online resources for people throughout North America to identify curbside, drop-off and mail back programs at www.epsindustry.org. Similar resources are being provided on our Facebook page, EPSRecycling as well as by Home for Foam and Earth 911.

Recycling and re-use opportunities for expanded polystyrene should be promoted to accomplish waste stream reduction. We would be pleased to answer any questions you or other committee members may have about EPS from an environmental standpoint. Please contact us directly if we can provide clarification or further assistance in your deliberation.

Sincerely,

EPS INDUSTRY ALLIANCE



Betsy Bowers
Executive Director

1. "2013 EPS Recycling Rate Report", EPS Industry Alliance
2. Life Cycle Inventory of Packaging Options for Shipment of Retail Mail Order Soft Goods, Franklin Associates, April 2004
3. 2013 NYC Curbside Waste Characterization Study

American Chemistry Council | Plastics Food Service Packaging Group

May 12, 2017

Honorable Antonio Reynoso, Chair
Committee on Sanitation and Solid Waste Management
New York City Council
250 Broadway
New York, NY

Subject: **Support:** Int. No. 1480: In relation to designating expanded polystyrene as recyclable and repealing sections 16-324 (f) and 16-329 of the administrative code of the city of New York

Dear Chairman Reynoso and Committee on Sanitation and Solid Waste Management members,

We are writing to express our support for Int. No. 1480 regarding the designation of expanded polystyrene as recyclable in the administrative code of the city of New York. The members of our group, the Plastics Foodservice Packaging Group (PFPG) of the American Chemistry Council (ACC), represent the leading suppliers and manufacturers of plastics foodservice packaging products, including polystyrene food and beverage containers.

Sustainability
We support the overall goals of the OneNYC (*The Plan for a Strong and Just City*), and believe the addition of expanded polystyrene to the city's programs will help it achieve two goals in this plan:

- Zero waste goal - reduce waste disposal by 90 percent by 2030 relative to 2005 levels. The addition of foam (and rigid) polystyrene to the City's recycling and recovery program are needed additions to help achieve zero waste.
- Green gas emissions goal – reduce the city's greenhouse gas emissions by 80 percent by 2050 relative to 2005 levels. Expanded polystyrene foodservice, including hot beverage coups, generates half as many greenhouse gas emissions from non-expanded polystyrene cups.

Polystyrene recycling plan for NYC – expanded polystyrene and more

- The proposal to recycling expanded polystyrene as well as rigid polystyrene plastics in NYC is a win-win for the City. By implementing Int. No. 1480, the recycling plan will cover almost all (100%) of polystyrene in NYC's residential recycling waste stream, and virtually eliminate all polystyrene foodservice going to landfill.
- The markets are set up for recycling food contaminated solid and foam polystyrene from NYC, with a contract that guarantees a buyer for 5 years, and a guarantee price per ton in the contract (commensurate with corrugated cardboard pricing)
- NYC can join Madison County and Yonkers, NY by successfully adding polystyrene, both foam and rigid, to its recycling program. Yonkers now collects and recycles any foam or rigid polystyrene, which includes take-out containers, foam-block packaging found in electronic boxes, and a host of everyday items.

Economic benefits for NYC
An independent 2016 report by Berkeley Research Group determined the polystyrene recycling proposal if implement in NYC will result in an economic gain for NYC of more than $56 million per year, based on:

- Costs of alternatives (2-3 times more) will cost consumers and businesses in NYC approximately an additional $51 million

- Landfill costs of heavier non polystyrene foam (98% air) alternatives will increase by almost $1.5 million per year if non-polystyrene foam alternatives are uses
- Recycling of polystyrene foam will save NYC just under $2 million in avoided landfill costs
- The recycling proposal will generate just over $2 million in revenue for the City annually

Employment/Jobs in New York State – NYC and beyond
Int. No. 1480 will reinforce the commitment of the polystyrene industry to New York State. The polystyrene foam foodservice industry provides a ripple effect in creating and maintaining jobs across the U.S. For instance, in New York State alone, four companies with nine facilities throughout the state, including just outside the metropolitan NYC area (Manufacturing, R&D, Warehouse, Distribution and Sales) employ 1,563 people and contribute $47.5 million in payroll and pay $2.3 million in state taxes (total of payroll taxes, sales and use taxes, machinery and equipment taxes and property taxes). These companies make products used by government agencies, restaurants, grocers, schools, hospitals, and food establishments large and small in both NYC and throughout NY State. (*Source: FPI 2008 Economic Impact Survey Data for New York)*

Benefits of Expanded Polystyrene in NYC
Expanded polystyrene foam foodservice products, like hot cups, clamshells, plates, and bowls, are a preferred foodservice by restaurants, bodegas, and food markets – large and small – in NYC. In addition to the low cost of foam, no other foodservice product keeps hot takeout food hot, or cold beverages cold. Polystyrene is approved as safe for use in foodservice by the Food and Drug Administration (FDA). FDA has determined for more than 50 years that polystyrene is safe for use in foodservice products. Expanded polystyrene foam has a lower environmental footprint to non-foam foodservice products like paperboard. That means less energy, less air emissions, and less solid waste generated for foam products compared to alternatives. Recycling under Int. No. 1480 will save additional resources compared to alternatives as well.

We urge the Committee on Sanitation and Solid Waste Management to act favorably and pass Int. No. 1480. We thank the Committee for your time and will make ourselves available as a resource if members have any questions after the hearing.

Sincerely,

Mike Levy, Director
Plastics Foodservice Packaging Group (PFPG)
(tel: 703-741-5647; e-mail: mike_levy@americanchemistry.com)

Steve Rosario, Senior Director, Northeast Region
American Chemistry Council
(tel: 770-421-2991; e-mail: **steve_rosario@americanchemistry.com**

CC: Committee on Sanitation and Solid Waste Management Committee:
Honorable members Andy King, Vanessa Gibson, Costa Constantinides and Steve Matteo

American Chemistry Council | Plastics Food Service Packaging Group

ADDENDUM - Factual Information and 3rd party studies on Polystyrene – Litter Prevention, Biodegradability, Composting, Polystyrene Foodservice Uses and Benefits and Costs versus Alternatives, Environmental, Safety and Health, Recycling

RE: Support of Int. No. 1480: In relation to designating expanded polystyrene as recyclable and repealing sections 16-324 (f) and 16-329 of the administrative code of the city of New York

Here's *information based on studies/independent experts* that should demonstrate how polystyrene foodservice (foam and rigid) is the safe, sustainable foodservice material for NYC:

Landfills, Biodegradation – According to the most recent USEPA Characterization of Municipal Solid Waste report – link http://www.epa.gov/osw/nonhaz/municipal/pubs/MSWcharacterization_fnl_060713_2_rpt.pdf, all plastic foodservice products contribute approximately 1% of waste generated, whereas paper and paperboard make up the largest components of MSW materials generated (28%). Landfills are not filling up with polystyrene foam or plastics – they are filling up with paper and paperboard as the largest contributors.

While popular culture has led many to believe that burying our nation's garbage in landfills is sort of like creating big compost heaps, modern landfills are specifically designed to minimize decomposition. The small amount of degradation that does occur in a landfill often generates methane, a much more potent greenhouse gas than CO_2. Products like polystyrene foam are inert and do not break down in landfills – that is a positive attribute. The Biodegradable Products Institute (BPI), a not-for-profit association of key individuals and groups from government, industry, and academia, has a mission to education manufacturers, legislators and consumers about the importance of scientifically based standards for compostable materials which biodegrade in large composting facilities. Under their "Myths of Biodegradation", BPI states:

Myth: Biodegradable products are the preferred environmental solution because waste simply biodegrades in the landfill.

Reality: Nothing biodegrades in a landfill because nothing is *supposed* to.

http://www.bpiworld.org/Default.aspx?pageId=190439

Small Part of Litter – According to a 2012 study, commonly used polystyrene foam foodservice products make up 1.5 percent of litter. The report compiled information from nineteen litter surveys conducted in the U.S. and Canada from 1994 to 2009, including a 2008 national survey of 240 sites. Evaluating only the surveys conducted since 2000 yields an even lower median value of 1.1 percent. (Source: "The Contribution of Polystyrene Foam Food Service Products to Litter," Environmental Resources Planning, Gaithersburg, MD, May 2012)

Bans Don't Work – and Polystyrene foam foodservice is a small part of litter (1.5%). While all litter should be reduced, polystyrene foam foodservice packaging makes up only 1.5 percent of litter, according to a May 2012 national report by environmental consulting firm Environmental Resources Planning. Banning a product like polystyrene foam foodservice ware and substituting it with a heavier product will not reduce litter. *Substituting one type of litter for another is not a smart strategy.* For example, when San Francisco placed restrictions on the use of certain plastic foodservice products, the city found that alternatives became more littered. Here are specific findings from the study:

- All fiber-based products and items comprised the largest category of total large (> 4 square inches in size) litter observed at 51 percent (Includes paper, paperboard, cardboard, towels, napkins, newspapers, books, flyers, printed materials, and business forms and stationary).
- The largest single type of large litter observed was non-branded paper napkins and paper towels. Printed paper materials were the second most significant litter type, and miscellaneous paper was the third most significant type.
- All plastic litter accounted for 24 % of total large litter observed, about half as much (by percent) as fiber-based products and items. (Includes miscellaneous plastic, plastic packaging, wrap, plastic bags-retail and non-retail, hot and cold plastic drink cups, plastic jars, bottles, composites, utensils, zip bags, beverage containers, trays, polystyrene cups, confectionary, sweet and snack food packaging, pouches, plates, retail bags and carrying rings)
- In 2008, all paper cups observed (hot, cold, and other) comprised over three times as much total large litter observed by percent (2.41 percent) as polystyrene cups (0.78 percent).
- In 2008, all paper cups observed (hot, cold, and other), increased to 2.41 percent of total large litter from 1.82 percent in 2007, while polystyrene cups decreased to 0.78 percent from 1.13 percent during the same period.
- More specifically, the number of paper hot cups observed increased 58% from 36 pieces in 2007 to 57 pieces in 2008
- Paper hot cups, not polystyrene foam hot cups, was one of the top 25 sub-categories (comprising 84 percent) of large litter.

This data indicates that prohibiting the sale and use of polystyrene cups does not decrease overall litter but just causes a shift in litter to other materials.

(Source: "The City of San Francisco Streets Litter Re-Audit 2008, prepared for the City of San Francisco Environment Department, July 4, 2008, http://sfenvironment.org/downloads/library/2008_litter_audit.pdf)

Composting: Not a Simple Solution – Many people believe that communities could easily compost paper-based and other "biodegradable" foodservice products. But it's not that simple. These used foodservice items would still need to be collected, separated and delivered to a large-scale compositing facility, of which there are few in the U.S. In the absence of such a facility, these products generally end up in landfills. Once in landfills, they do not readily break down because modern landfills are actually designed to retard decomposition.

Environmental Footprint – How does polystyrene foodservice compare to other foodservice materials – what is its environmental footprint?

A measure of sustainability goes well beyond whether a product can be recycled or composted. It's an assessment throughout the whole life cycle of making a product from raw materials (cradle) to end of life disposal (final use), and then determining what the impacts are on the environment. Polystyrene foam foodservice, when compared to alternative foodservice products (namely coated bleached paperboard and corn-based compostable foodservice), is actually more sustainable in that the footprint (or burden) of raw materials, energy resources, air, water, solid waste emissions it takes to makes PS foam foodservice products (on an item by item basis) is lower than what it takes to make non polystyrene foam foodservice containers.

- Highlights of the study include:
    - **Energy use:** Polystyrene foam products consume significantly less energy than the alternatives—half as much as wax-coated paperboard cups and one-third as much as PLA clamshells.
    - **Water use:** Polystyrene foam products use significantly less water than the alternatives—up to four times less than PLA clamshells.
    - **Solid waste:** Polystyrene foam products create significantly less solid waste by weight than the alternatives—up to five times less than paperboard and PLA products. Comparisons by volume vary widely:
        - Polystyrene foam cups for hot drinks create less waste by volume than the alternatives—significantly less than paperboard cups with corrugated sleeves used for insulation.
        - Polystyrene foam cups for cold drinks create similar waste by volume as plastic coated paperboard cups and significantly less than wax coated paperboard and PLA cups.

- Heavy duty polystyrene foam plates produce more solid waste by volume than the alternatives, while lighter duty polystyrene foam plates create similar waste by volume as the paperboard counterparts.
- Polystyrene foam clamshells create slightly more waste by volume than paperboard clamshells and half the waste by volume of PLA clamshells.

- **Greenhouse gases:** Polystyrene foam products generate slightly more greenhouse gas emissions than PLA products, expressed as net CO_2 equivalents (see note below). If paperboard products do not degrade after disposal, they store carbon and generate fewer greenhouse gas emissions than polystyrene foam products; however, if paperboard products degrade to the maximum extent, they generate more greenhouse gas emissions than polystyrene foam products, so comparisons of greenhouse gas emissions vary widely depending on assumptions about the degradation of paperboard products.

Summary: When developing policy around polystyrene foam foodservice containers, it is important to evaluate its overall sustainability including, but not limited to, the end of life disposal of the product. When doing so, the studies show polystyrene foam foodservice products are actually more sustainable than alternative products, which are usually heavier by weight and have larger impacts on the environment. A link to the release of the study (http://www.americanchemistry.com/Media/PressReleasesTranscripts/ACC-news-releases/New-Study-Polystyrene-Foam-Cups-and-Plates-Use-Less-Energy.html) as well as to the full peer reviewed study is provided here - http://plasticfoodservicefacts.com/Life-Cycle-Inventory-Foodservice-Products.

Used polystyrene foodservice can help contribute an energy solution, too. Polystyrene foodservice also can be used as a source of energy. Polystyrene actually has more captured energy than coal. This energy is released when municipal solid waste is processed at waste-to-energy recovery facilities. The U.S. has 86 such facilities that can recapture this energy and put it to good use, creating a domestic energy source to power homes and business.

Polystyrene foodservice saves fuel, energy and greenhouse gas emissions to make and transport. Polystyrene foodservice uses less energy and resources to manufacture than alternatives. And as very lightweight plastic, shipping polystyrene saves precious fuel. A full life cycle study highlights the tradeoffs and advantages of polystyrene foam foodservice from an overall energy, air, water and waste perspective (http://plasticfoodservicefacts.com/Life-Cycle-Inventory-Foodservice-Products)

Benefits of Plastic Foodservice and Minimizing Food Waste – Durable and lightweight, plastics provide important benefits including significant energy and resource savings, longer food shelf life, improved healthcare and consumer protection. According to a recent study by TruCost[1], using plastic for packaging and consumer goods instead of alternative materials deliver reduced greenhouse gas emissions and uses fewer resources. In fact, the TruCost study shows the environmental costs for using plastic alternatives is four times greater than the environmental costs of using plastics. Thus, banning or otherwise restricting plastic use would lead to increases in greenhouse gas emissions and increased food waste.

PS Foodservice Uses and Benefits

PS foodservice is a safe, low cost, and efficient foodservice package that has been used for over 50 years. It has performance benefits that make it a preferred choice – from PS lids used on all hot beverage materials (paper and plastic) to prevent burning from leaky seals, to PS foam cups and clamshells that utilize 98% air as insulation, keeping hot foods hot and cold liquids cold. Most communities have not demonstrated any performance benefit with the alternative foodservice materials to PS and certain plastics foodservice, or any environmental benefit of these alternatives – with no current infrastructure in place to compost all the non-plastics foodservice.

---

[1] TruCost, 2016. *Plastics and Sustainability*, https://www.plasticpackagingfacts.org/wp-content/uploads/2016/08/ACC-report_July-2016_v4.pdf.

Polystyrene foodservice costs versus alternatives

Polystyrene foodservice containers – both foam polystyrene (e.g., cups, clamshells, plates) and solid polystyrene (e.g. cups, lids) are anywhere from 2–3 times less expensive than coated bleached paperboard items, and 2-4 times less expensive than compostable alternatives. Local NYC restaurants, bodegas, food establishments, cafeteria owners, as well as the restaurant/beverage associations have testified this cost difference is a major impediment to their businesses – and these costs cannot be passed on.

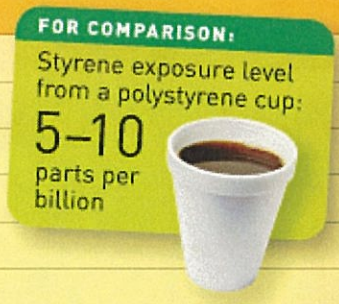
Polystyrene is approved as safe for use in foodservice by the Food and Drug Administration (FDA). FDA has determined for more than 50 years that polystyrene is safe for use in foodservice products. A common but unnecessary worry about many plastics in foodservice is that they may have tiny amounts of constituents that can make their way into food. This is precisely one of the reasons why the FDA reviews and approves every material to be used in contact with food for safety -- before it hits the market -- and this includes a look at what might migrate out of the material, so FDA scientists and regulators are fully satisfied about the safety of the material.

Polystyrene should not be confused with styrene. Polystyrene and styrene are different substances. Styrene, a liquid, and polystyrene, a solid are fundamentally different. Styrene is a liquid that can be chemically linked to create polystyrene, which is a solid plastic that displays different properties. Polystyrene is used to make a variety of important consumer products, such as foodservice containers, cushioning for shipping delicate electronics, and insulation. Equating polystyrene with styrene is like equating a diamond with carbon. They are not the same substance.

National Toxicology Program (NTP): "Let me put your mind at ease …" NTP Director Dr. Linda Birnbaum, PhD., was widely quoted in Associated Press reports in June 2011 when the NTP decided to include styrene in its 12th Report on Carcinogens: "Let me put your mind at ease right away about polystyrene foam … In finished products, certainly styrene is not an issue." Experts from the U.S. National Institute of Environmental Health Sciences (NIEHS) and the American Cancer Society, along with NTP's Associate Director John Bucher, have reached the same conclusions as Dr. Birnbaum. "Styrene should not be confused with polystyrene (foam). Although styrene, a liquid, is used to make polystyrene, which is a solid plastic, we do not believe that people are at risk from using polystyrene products" (NIEHS). Attached are statements from key health agency experts stating that polystyrene foam foodservice ware made from styrene causes no concern for use by consumers in the marketplace.

The Safety of Styrene in Selected Foods and Polystyrene Foam Foodservice Cups - Styrene occurs naturally in foods such as strawberries and cinnamon. Whether naturally occurring in foods and beverages such as strawberries, coffee beans or cinnamon, or produced synthetically, most people encounter styrene as a part of their daily lives, though in small amounts. Scientific studies have shown that the small amounts of styrene consumers may be exposed to are not harmful; studies have also shown that, should exposure occur, styrene does not stay in the body for long and is rapidly metabolized and excreted. There is more styrene found in cinnamon, beer and beef than there is in a foam cup. For more detailed information, visit: http://youknowstyrene.org/health-and-safety/consumers/

Styrene, Food and Packaging	
Food/Beverage (No man-made styrene contact)	Styrene Levels Measured (parts per billion)
Cinnamon	170–39,000
Beer	10–200
Beef	5.3–6.4
Coffee Beans	1.6–6.4
Strawberries	0.37–3.1
Peanuts	1–2.2
Wheat	0.4–2



Variety of Polystyrene Recycling Programs:

Polystyrene foodservice products are recycled in various ways in many communities, depending on the local solid waste program. If a community, a school, a restaurant or supermarket wants to take advantage of plastic foodservice product recycling, there are several ways to make that happen. Recycling polystyrene foam is fairly simple. The City of Baltimore has elected to recycle polystyrene in selected areas, and has enacted neighborhood cleanup programs to deal with all litter. The plastic products must be collected (free of major food debris) and delivered to a facility close enough to make the transport economical. (Because foam packaging is more than 90% air, most programs "densify" the products to get more on a truck.) The plastic is then ground up, heated and recast into plastic pellets. These pellets are sold to companies that make products such as "green building" construction materials, consumer products and plastic packaging.

Interactive Plastics Recycling Map/Markets – Moore Recycling partnership:
ACC Plastics Division, working with partner groups FPI, EPS-IA, Canadian Plastics Industry Association and SPI, helped develop through recognized recycling expert Moore Recycling, an interactive website to facilitate recycling of polypropylene and foam polystyrene in U.S. and Canada. The website below highlights different venues – schools, restaurants, cities, national parks – that recycle foam and also contain videos that walk through the various aspects of polystyrene foam recycling:

Communities throughout the U.S. have a source that is current to see where they can take their plastic recycling: http://www.recyclemoreplastic.org/

There are over 500 curbside/drop off programs nationwide recycling polystyrene foam foodservice and protective packaging. These sites are regulatory updated on the website. Here is the link to the foam polystyrene (EPS) information:

http://www.recyclemoreplastic.org/plastics/eps_map.html:

Many schools that use expanded polystyrene foam have recycling programs. One particular organization, Foodservice Sustainability Solutions (FSS), http://www.styrosmart.com/modx/ specializes in waste stream reduction and recycling for commercial and institutional foodservice expanded polystyrene waste and school waste. They provide real results from the six schools in the Houston Integrated school District involving recycling of expanded polystyrene foam foodservice resulting in 100% landfill diversion, reduction greenhouse gases, cutting waste removal cost by 70%, reduction trash bag costs, and trash bag usage. This is a model that can be used in many schools.

Recycling solutions for post-use foodservice are emerging – new grant program for polystyrene foam announced. Polystyrene foam foodservice packaging is being recycled in many communities across the country. The foodservice industry through its Foam Recycling Coalition's launched a new grant program this year to help fund infrastructure for the collection, processing and marketing of products made for polystyrene foam (www.fpi.org/recyclefoam). The grant program targets post-consumer polystyrene foam products such as foodservice packaging (i.e., cups, plates, bowls, clamshells, cafeteria trays); egg cartons; meat rays; and protective "transport" packaging. Funding is now available for foam recycling programs through this grant program – applications must be submitted by April 17, 2017 for priority consideration. http://www.fpi.org/index.php?bid=100&storyid=185
A new study by the Berkeley Research Group (*Market Analysis of End Uses for Recycled Post-Consumer expanded polystyrene food ware*) found nearly 140 companies that process or use recycled post-consumer foam, including food ware, in the U.S. and Canada (http://www.fpi.org/fpi/files/ccLibraryFiles/Filename/000000000779/BRG%20Memo%20Report%2010-9-2014.pdf) . Banning this product when it can be recycled is not a sustainable solution.

Where do people have access to Polystyrene Foam Foodservice is Actually Recycled? 65 cities in California (representing 22% of the population) have PS foam recycling going on – both foodservice polystyrene foam and what we call EPS (expanded PS foam) protective packaging (shape molded transport packaging, PS "peanuts"/loose fill). There are recyclers like Nepco in California that collect, process and make picture frames out of the recycled polystyrene foam.

Polystyrene Foam Recycling Opportunities in New York State – can it be available in NYC?
Waste disposal, including recycling, is generally a local municipal issue – with cities, counties, and jurisdictions developing and implementing programs that best fit their needs. Recyclables like polystyrene foam can be included in those programs, if the various stakeholders involved work together. The plastics foodservice industry has experience and interest in working with localities, and feels positive programs like recycling, recovery from waste, and waste reduction go a long way in meeting sustainability goals for government and industry alike. The new grant program from the Foam Recycling Coalition described above is another effort aimed at adding polystyrene foam to city recycling programs across the U.S.

In Madison County, NY, polystyrene foam foodservice and protective "cushion "packaging has been added to the County's list of accepted recyclables. In Yonkers, NY, Mayor Mike Spano announced the addition of polystyrene foam cups to the city's recycling program. Yonkers now collects and recycles any foam or rigid polystyrene, which includes take-out containers, foam-block packaging found in electronic boxes, and a host of everyday items. Details can be found at: http://www.yonkersny.gov/Home/Components/News/News/2177/3218?backlist=%2F

The proposal to recycling expanded polystyrene as well as rigid polystyrene plastics in NYC is a win-win for the City. By implementing Int. No. 1480, the recycling plan will cover almost all (100%) of polystyrene in NYC's residential recycling waste stream, and virtually eliminate all polystyrene foodservice going to landfill. The markets are set up for recycling food contaminated solid and foam polystyrene from NYC, with a contract that guarantees a buyer for 5 years, and a guarantee price per ton in the contract (commensurate with corrugated cardboard pricing)

May 12, 2017
New York City Council
Bill No. Intro 1480

Patrick Diamond - Surfrider NYC

Testimony in Opposition to Int 1480-2017 Designating expanded polystyrene as recyclable

Introduction:

The Surfrider Foundation is dedicated to the protection and enjoyment of the world's oceans, beaches and coastlines. Surfrider NYC is the local chapter here in New York City with over 450 members in the five boroughs and a network of volunteers and supporters state- and nation-wide numbering in the thousands. We host beach cleanups (Rockaways), year-round water quality testing (Rockaways and Coney Island) and a new youth program (Rockaways) to list just a few things we do. We also have a Long Beach, N.Y. chapter and an Eastern Long Island chapter. Surfrider NYC is a 100% volunteer chapter.

EPS Harm to the Marine Environment:

EPS/polystyrene/Styrofoam (collectively referred to herein as "EPS") is extremely harmful to our local beach environment and items made from EPS are consistently found on our beaches during cleanups. Broken Styrofoam coolers, EPS coffee cups, and EPS food containers are all items frequently left on our local beaches because they are single-use and disposable – meaning these products are inexpensive and convenient for people to use and throw away or simply leave behind as litter. EPS breaks apart easily under coastal conditions (wind, water, sand) and once it breaks apart it becomes easily airborne and extremely difficult to remove from our beaches.

Plastic pollution in general (of which EPS is a major part) has become a massive problem in our oceans and waterways. Once in the water, plastic pieces concentrate toxins already in the water thereby becoming a threat to the health of fish, birds, and all marine life when these plastic and EPS pieces are mistakenly ingested. The problem is so great that it is starting to affect the food chain as we consume seafood that has previously fed on toxic plastic.

Recycling is Not the Solution:

The "Three Rs" of sustainability are REDUCE, REUSE, and then – as a last option – RECYCLE. The City Council should take all possible steps to reduce EPS use and trash in and around New York City – not expand a recycling program struggling to keep up with a growing trash problem.

Despite a recycling program dating back to the 1980s, New York City currently has a 16-17% recycling rate. Taking EPS industry claims at face-value, that means –at most – 13-14% of EPS waste generated in New York City would actually make it to recycling centers.[1] 86%-87% of EPS trash would make its way to landfills or contribute to polluting New York City's environment. That is a costly (both fiscally and environmentally) and an unacceptable outcome for the residents and taxpayers of New York City. The current recycling program should be bolstered by education and outreach, and not by adding more rules to a system most residents struggle to comply with and already find confusing.

Based on the "Report on the Fiscal 2017 Preliminary Budget and the Fiscal 2016 Preliminary Mayor's Management Report" dated March 16, 2016 (available at https://council.nyc.gov/budget/wp-content/uploads/sites/54/2016/05/827-Department-of-Sanitation.pdf):

- The New York City Department of Sanitation budget has increased from approximately $1.4 billion in 2014 to above $1.64 billion in 2017.
- Collection and street cleaning has increased from approximately $655 million in 2014 to $716 million in 2017.
- Waste Export has increased from approximately $299 million in 2014 to $387 million in 2017.
- Approximately 11,000 tons of residential and institutional refuse is collected by the Sanitation Department daily and exported by private vendors for disposal.
- The only two revenue streams identified in the Report were Recycled Bulk & Paper sales ($4.8 million in revenue) and Recycled Newspaper ($1.591 million in revenue).

These numbers are incredible and offer indisputable evidence that New York City's waste problem is out of control...and the problem is growing. This Committee, and the City Council as a whole, should move with all deliberate speed to pass legislation to reduce (not recycle) waste – especially EPS waste – generated by its residents (for example, by reintroducing legislation to ban EPS) and not be swayed by economically-motivated parties promoting dubious claims about recycling programs and markets for its harmful EPS products.

Thank you for the opportunity to speak with you today.

[1] In New York State Supreme Court, in a lawsuit challenging New York City's 2010 EPS ban, the Dart Corporation, the largest EPS manufacturer, offered that its state-of-the-art optical sorting machine can capture from at least 75% and up to 90-95% of EPS sent to recycling centers.

May 12, 2017
New York City Council
Bill No. Intro 1480

Patrick Diamond - Surfrider NYC

Testimony in Opposition to Int 1480-2017 Designating expanded polystyrene as recyclable

Introduction:

The Surfrider Foundation is dedicated to the protection and enjoyment of the world's oceans, beaches and coastlines. Surfrider NYC is the local chapter here in New York City with over 450 members in the five boroughs and a network of volunteers and supporters state- and nation-wide numbering in the thousands. We host beach cleanups (Rockaways), year-round water quality testing (Rockaways and Coney Island) and a new youth program (Rockaways) to list just a few things we do. We also have a Long Beach, N.Y. chapter and an Eastern Long Island chapter. Surfrider NYC is a 100% volunteer chapter.

EPS Harm to the Marine Environment:

EPS/polystyrene/Styrofoam (collectively referred to herein as "EPS") is extremely harmful to our local beach environment and items made from EPS are consistently found on our beaches during cleanups. Broken Styrofoam coolers, EPS coffee cups, and EPS food containers are all items frequently left on our local beaches because they are single-use and disposable – meaning these products are inexpensive and convenient for people to use and throw away or simply leave behind as litter. EPS breaks apart easily under coastal conditions (wind, water, sand) and once it breaks apart it becomes easily airborne and extremely difficult to remove from our beaches.

Plastic pollution in general (of which EPS is a major part) has become a massive problem in our oceans and waterways. Once in the water, plastic pieces concentrate toxins already in the water thereby becoming a threat to the health of fish, birds, and all marine life when these plastic and EPS pieces are mistakenly ingested. The problem is so great that it is starting to affect the food chain as we consume seafood that has previously fed on toxic plastic.

Recycling is Not the Solution:

The "Three Rs" of sustainability are REDUCE, REUSE, and then – as a last option – RECYCLE. The City Council should take all possible steps to reduce EPS use and trash in and around New York City – not expand a recycling program struggling to keep up with a growing trash problem.

Despite a recycling program dating back to the 1980s, New York City currently has a 16-17% recycling rate. Taking EPS industry claims at face-value, that means –at most – 13-14% of EPS waste generated in New York City would actually make it to recycling centers.[1] 86%-87% of EPS trash would make its way to landfills or contribute to polluting New York City's environment. That is a costly (both fiscally and environmentally) and an unacceptable outcome for the residents and taxpayers of New York City. The current recycling program should be bolstered by education and outreach, and not by adding more rules to a system most residents struggle to comply with and already find confusing.

Based on the "Report on the Fiscal 2017 Preliminary Budget and the Fiscal 2016 Preliminary Mayor's Management Report" dated March 16, 2016 (available at https://council.nyc.gov/budget/wp-content/uploads/sites/54/2016/05/827-Department-of-Sanitation.pdf):

- The New York City Department of Sanitation budget has increased from approximately $1.4 billion in 2014 to above $1.64 billion in 2017.
- Collection and street cleaning has increased from approximately $655 million in 2014 to $716 million in 2017.
- Waste Export has increased from approximately $299 million in 2014 to $387 million in 2017.
- Approximately 11,000 tons of residential and institutional refuse is collected by the Sanitation Department daily and exported by private vendors for disposal.
- The only two revenue streams identified in the Report were Recycled Bulk & Paper sales ($4.8 million in revenue) and Recycled Newspaper ($1.591 million in revenue).

These numbers are incredible and offer indisputable evidence that New York City's waste problem is out of control...and the problem is growing. This Committee, and the City Council as a whole, should move with all deliberate speed to pass legislation to reduce (not recycle) waste – especially EPS waste – generated by its residents (for example, by reintroducing legislation to ban EPS) and not be swayed by economically-motivated parties promoting dubious claims about recycling programs and markets for its harmful EPS products.

Thank you for the opportunity to speak with you today.

[1] In New York State Supreme Court, in a lawsuit challenging New York City's 2010 EPS ban, the Dart Corporation, the largest EPS manufacturer, offered that its state-of-the-art optical sorting machine can capture from at least 75% and up to 90-95% of EPS sent to recycling centers.

RIVERKEEPER
NY's clean water advocate

Riverkeeper Strongly Opposes Int. 1480
Testimony of Jeremy Cherson, Campaign Advocacy Coordinator
May 12, 2017

I would like to thank the City Council for the opportunity to testify today on this ill-advised legislation on behalf of Riverkeeper's thousands of members and supporters.

Through advocacy, prevention, community education and stewardship, Riverkeeper is working towards realizing our vision of a trash-free Hudson. Our annual day of service, the Riverkeeper Sweep, engages thousands of New Yorkers from Brooklyn to the Adirondacks at over 100 sites to clean-up our shorelines and waterways. Each year, polystyrene constitutes a major source of the marine debris our Riverkeeper Sweep volunteers clean-up. At our May 6, 2017 Sweep, polystyrene pollution was the most common item found at 22 percent of our 101 sites. At our 2016 shoreline cleanup polystyrene was the most common debris found at 26 percent of our 109 sites. Our direct experience with polystyrene on our shorelines necessitates our advocacy to eliminate the scourge of polystyrene pollution in the Hudson River Estuary.

The industry backed bill, Int. 1480, seeking to require New Yorkers to recycle a product where recycling is not feasible is misguided and would steer New York City in the wrong direction of its Zero Waste goals. On January 1, 2015, Sanitation Commissioner Kathryn Garcia issued a memorandum in accordance with LL 142 of 2013 on the feasibility of recycling expanded polystyrene. Commissioner Garcia determined what municipalities around the country already know: there is no viable recycling market for expanded polystyrene and cannot be considered economically feasible.[1] Over 100 other local governments in the United States agree with Commissioner Garcia, and have passed ordinances restricting or prohibiting the use of polystyrene, including Ulster County here in New York State.[2]

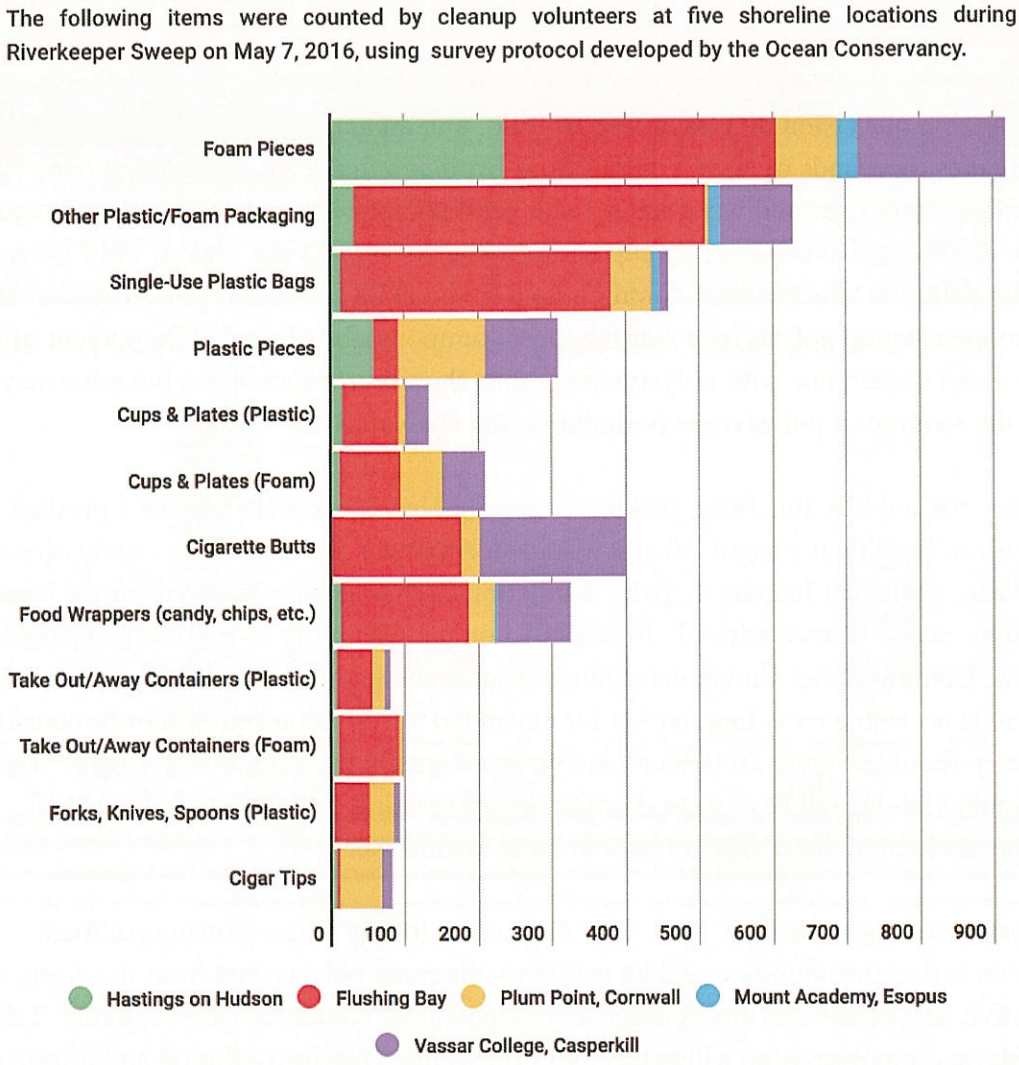
Riverkeeper encourages the New York City Council to follow in the footsteps of local governments across the country and take action to eliminate polystyrene from the waste stream. Cost effective, affordable and environmentally responsible alternatives are available. Taking action to phase out polystyrene will protect wildlife, reduce marine pollution and improve the quality of life for New Yorkers.

I appreciate the opportunity to be here today and hope the City Council will forcefully reject Int. 1480.

---

[1]Garcia, Kathryn, Re: Local Law No. 142 of 2013 Determination
http://www1.nyc.gov/assets/dsny/downloads/pdf/about/laws/Polystyrene_foam_determination_LL142_2013.pdf
[2] http://www.surfrider.org/pages/polystyrene-ordinances

Figure 1: Data collected from our first expanded data collection pilot project in 2016. May 6, 2017 Riverkeeper Sweep data is currently under analysis and will be posted to www.riverkeeper.org by the end of May, 2017.



FOR THE RECORD

FOR THE RECORD

City Council Hearing on polystyrene waste
May 12, 2017

Good morning. Thank you for the opportunity to testify about how to deal with polystyrene waste in New York City. My name is Jessica Quiason and I am the Strategic Researcher at ALIGN: the Alliance for a Greater New York. ALIGN is a community-labor coalition dedicated to creating good jobs, vibrant communities, and an accountable democracy for all New Yorkers.

I also represent the Transform Don't Trash Coalition, a coalition of labor, community and environmental justice groups advocating for better standards in the commercial waste industry. Members of the coalition are ALIGN, International Brotherhood of Teamsters Joint Council 16, New York City Environmental Justice Alliance, New York Lawyers for the Public Interest, and Natural Resources Defense Council. The coalition came to together to address chronic problems and inequities in the private waste industry in NYC that plague communities, workers and the environment. Our platform addresses these issues and promotes policy solutions that will increase diversion from landfill, boost recycling, improve job quality and safety, and foster fair siting of waste infrastructure.

Diverting waste from landfills and into recycling when possible is not only an environmental necessity to combat climate change, but is also a significant opportunity to create thousands of sustainable jobs in NYC. Last year, our coalition released a report called, "Clean City, Green Jobs: How Smart Recycling Policies Can Build NYC's Economy." With our research we were able to show that processing waste at a New York-area recycling facility typically involves 8 times more jobs per ton than at a transfer station, which is a way station for landfills. Recycling also extends the life cycle of materials, creating more opportunities for reuse and remanufacture that generate even more jobs. Recycling, when paired with other zero waste strategies, can offer a critical pathway for our city to achieve sustainable job and environmental goals.

Last year, the Mayor made great strides towards a more efficient and equitable waste system by committing to creating exclusive commercial waste zones. In addition to addressing the environmental and community impacts of truck traffic, it is critical that zoning require higher standards for diversion from carters so that waste reduction is achieved alongside the creation of quality jobs. For diversion standards to have the greatest impact on job creation, the waste stream must contain as much recyclable material as possible.

However, waste can only be recycled if the material it is made of is genuinely recyclable. The inability of polystyrene to be feasibly and economically recycled is well documented, as affirmed

ALIGN: The Alliance for a Greater New York
50 Broadway, 29th FL
New York, NY 10004
T: 212-631-0886 | F: 888-370-3085
www.ALIGNny.org
ALIGN is a local affiliate of Jobs with Justice and the Partnership for Working Families

by the Sanitation Commissioner herself as well as a separate study by former Commissioner Brendan Sexton. Attempts to develop recycling programs for this material elsewhere have failed: it is simply not economically viable because of the cost of hauling this high-volume waste and the lack of market for the material.

If the waste stream continues to contain materials like polystyrene that cannot be realistically recycled, the Mayor's strategies to reach job creation goals and zero waste by 2030 will be for naught. The only environmental option here is to prohibit the use of this polluting material, as over 100 communities around the US are moving to do.

Maintaining a complete vision for a more sustainable, equitable New York is crucial to diminish the two most significant threats to our city: climate change and inequality. From manufacturing to waste collection to recycling, New York is in the position to boldly reimagine all steps of the waste system as part of the larger goals of zero waste, creating quality jobs at a living wage and ensuring a healthy environment across all communities.

ALIGN: The Alliance for a Greater New York
50 Broadway, 29th FL
New York, NY 10004
T: 212-631-0886 | F: 888-370-3085
www.ALIGNny.org
ALIGN is a local affiliate of Jobs with Justice and the Partnership for Working Families

SUSTAINABLE MATERIALS MANAGEMENT OF CALIFORNIA

PO Box 1327
Sonoma, CA 95476

T 707-935-3390
F 707-935-1998
Patty@SMMofCA.com

SMMofCA.com

PATTY MOORE, PRESIDENT
TESTIMONY NYC SANITATION COMMITTEE HEARING MAY 12, 2017
IN SUPPORT OF POLYSTYRENE RECYCLING IN NYC

My name is Patty Moore, I am the President of Sustainable Material's Management of California and founder of Moore Recycling Associates. I have been in the plastic recycling industry since 1983 when I worked for a pioneering mandatory municipal recycling facility in Wilton, NH. It was there that I started one of this country's first post-consumer plastic recycling programs. A few years later, I started Moore Recycling Associates, a consulting and management firm, which I recently sold to two long-time employees as part of my effort to reduce my hours toward retirement. As I launched Moore Recycling in 1989, I finished up my Master of Science degree with the project *Plastics in the Waste Stream and Industry's Response on Long Island*, which included a Polystyrene Recycling Plan for Long Island. Needless to say, my plan was not adopted and the National Polystyrene Recycling Company (NPRC)—an integral part of the plan—had a very public decline. Let me explain why…

Back in the early 1980s, there were no post-consumer reclaimers of any plastic other than PET. Wellman Industries was the only vertically integrated PET reclaimer. Very few outlets for recycled plastic material existed. Recovery of plastics grew over time, though. For example, in 1996, the recycling rate report on PET from the National Association for PET Container Resources (NAPCOR) showed less than 700 million pounds of PET bottles were collected for recycling. By 2015, it was approximately 1.8 billion pounds. Other post-consumer resin recycling has seen similar upticks, and more plastic materials—including non-bottle containers, film & wraps, foam, and non-film flexible products (such as woven bags) have been added to recycling collection programs nationwide.

To explain what fueled this expansion, we need to look at the basics. As Dave Cornell, technical consultant to The Association of Plastic Recyclers (APR), has taught us, plastic recycling—and recycling of any material—needs four things to succeed: a sufficiently **large & recycle-ready supply**, the **technology** to cost-effectively convert material, profitable **end markets**, and **money** to fund the system.

In the three decades I have been part of the industry, the power of those fundamentals has been demonstrated time and again. And by looking back at the ways the economic truths have manifested themselves, the industry can learn what underpins success as packaging evolves and sustainable materials management thinking guides corporate and governmental decision-making.

Garnering quality material is of course only the first step. Next is the importance of cost-effectively transforming that plastic into buyer-ready products, a fundamental that has consistently evolved at the reclaimer level. Successful reclaimers share many traits. Vertically integrated facilities (those that not only wash material but turn it into a new product) are much more likely to succeed because integration takes cost out of the system at each step: collection, processing and end use. In contrast, merchant reclaimers (those that only make plastic pellets or flake but not a product) are less likely to flourish, especially in poor market conditions. Established reclaimers make regular investment in technology, upgrading systems as new, better equipment becomes available. Thirty years ago very few facilities had resin identification equipment—most relied on hand sorting. Today it is essential to have a network of auto-sort hardware as well as a regular employee training program so that workers understand the changes in the stream over time and spot problems before they end up in the finished product.

Along with training, every successful conversion program has vigorous data collection—profitable reclaimers know the quality level of each of their suppliers, pay accordingly and provide feedback to maintain consistent supplies. By understanding and adapting to the market, reclaimers push forward the conversion process, opening up new pathways in the collection of input material. Furthermore, long-standing reclaimers show an incredible amount of versatility through changes in both supply and end-market demand.

Back to the National Polystyrene Recycling Company, which started in 1989 with the specific mission of recycling food-service foam polystyrene (PS). While they received substantial capital funding from manufacturers, they only collected used food-service foam PS at drop-off programs, meaning they were taking in the lowest quality foam and at very low volumes, not a recipe for success.

By contrast, Plastics Recycling Inc. (PRI) is targeting curbside-collected material and all PS—rigid and foam—not just food-service items. This gives them a much larger base of material. New York City has eight million people and two MRFs to generate PS, which will create critical mass: **a large supply**. Another advantage that did not exist in the early days, are auto-sorting systems that optically recognize and separate PS items of all sizes from other materials, drastically improving the material's condition: **a large & recycle-ready supply**. The segregated PS—Foam and rigid—can be baled together using existing equipment to make full truckload quantities. PRI has other advantages, they have a long history of recycling PS, and have invested in equipment that matches the demands of the material allowing them to cost effectively convert PS: **technology**. They are a vertically integrated facility, which means that in addition to compounding, they manufacture a product made from the recycled PS: **end market**. Lastly—and often the missing piece—PRI has the financial backing of Dart Container, which has also given market guarantees for the baled material: **money**. For this reason, the PS recycling program in New York has a very high likelihood of long-term success, unlike its predecessors.

I strongly recommend that NYC not abandon the PS to the landfill, instead, embrace these advances in science and technology and recycle all PS in New York City!

New York Lawyers
For The Public Interest, Inc.
151 West 30th Street, 11th Floor
New York, NY 10001-4017
Tel 212-244-4664 Fax 212-244-4570
TTY 212-244-3692 www.nylpi.org

Testimony of Melissa Iachan,
New York Lawyers for the Public Interest,
Before NYC Council Committee on Sanitation & Solid Waste Management
Hearing on Intro 1480
Dated May 12, 2017

Good afternoon, my name is Melissa Iachan, and I am a Senior Staff Attorney in the Environmental Justice Program at New York Lawyers for the Public Interest. I would like to thank Chair Reynoso and the other members of the Committee and City Council here today for giving me the opportunity to speak. New York Lawyers for the Public Interest has been working for many years along with community partners to address the disparate burdens of waste on a few communities of color in our City. We are deeply concerned that Intro 1480 will have negative consequences in those communities, for our City's laudable Zero Waste goals, and on our natural resources and environment. NYLPI strongly opposes Intro 1480, and instead supports legislation that would ban polystyrene foam food and beverage containers.

As you've already heard from many of my esteemed colleagues and partners, Intro 1480 is both misinformed and misleading. Polystyrene should absolutely not be defined as recyclable under city law when it cannot practically be recycled. As you've heard, no other city has successfully implemented recycling of polystyrene. There is no reason NYC would be able to do so. To label this material as recyclable would have serious environmental and public health repercussions, to say nothing of further eroding the faith in our city's recycling system.

As our city continues to espouse our Zero Waste goals, the public's faith in our recycling system continues to be undermined, largely by private haulers

and facilities who simply don't recycle pre-separated waste. Deeming polystyrene "recyclable" when we know it will not actually be recycled would only further harm the admirable efforts that our Mayor and Department of Sanitation have been making to improve our city's diversion rates.

This bill will also likely increase the amount of polystyrene that we see in our communities and in our waste stream. Currently, in large part due to the excellent education campaign undertaken by the Department of Sanitation some four or five years ago highlighting the material's risks to both people and the environment, polystyrene now represents less than 2% of our waste stream. By deeming it "recyclable" both food service providers AND consumers may think that not only is it benign to use it, but somehow beneficial, and this potentially toxic material will again proliferate in our city.

This is dangerous to the environment, to public health, and to communities overburdened by waste. Manufacturing polystyrene is harmful to the environment, and disposing of it is expensive and polluting. In addition, consuming hot beverages or food from polystyrene has been shown to be risky to humans for the possibility of ingesting the styrene—a known carcinogen. And of course, like so many other environmental threats, the communities who would bear the brunt of this will likely be our city's low income communities. The types of quick service food service vendors and food carts who used to rely on this cheap material, and will likely be the first to once again begin serving food and beverages out of it, are often located in our lower income communities of color, where families and children will once again be exposed to the risks associated with serving hot food and drink in polystyrene.

Finally, increasing this portion of our waste stream also means sending even more garbage to the three most overburdened communities who already take more than 75% of New York City's waste. This means more trucks in, and more trucks out, releasing more fumes into the air in neighborhoods where children suffer from asthma almost two times more than their Manhattan counterparts.

So, as you see, the problems with designating polystyrene as recyclable are not few, and are not small. You are hearing from so many of us because we stand together in saying that this, plainly speaking, is a terrible idea. A much more pragmatic solution would be to ban polystyrene entirely; in fact, that legislative effort has begun, and we believe that we can unite in moving that forward and move our City towards a cleaner, healthier, more equitable and sustainable tomorrow.

FOODSERVICE PACKAGING INSTITUTE®

7700 Leesburg Pike, Suite 421, Falls Church, VA 22043
tel (703) 592-9889 fax (703) 592-9864
email fpi@fpi.org web www.fpi.org

Comments to
The New York City Council
Committee on Sanitation and Solid Waste Management
Hearing on Int No 1480
May 12, 2017

Good afternoon, Chairman Reynoso and council members. My name is Natha Dempsey, and I am vice president of the Foodservice Packaging Institute. My association represents the foodservice packaging industry, including many manufacturers of foam cups and take-out containers. I am here today to ask for your support of Intro 1480 designating foam polystyrene as recyclable in New York City.

We strongly encourage all efforts to recycle foam based on our extensive research about and experience with foam recycling over the last several years.

In 2014, foam foodservice packaging manufacturers and their suppliers came together to form the Foam Recycling Coalition. This group, housed under the Foodservice Packaging Institute, has been working voluntarily to expand the recycling of foam foodservice packaging across the U.S. and Canada.

Through our work, we know there are many myths about foam recycling. The three arguments we have heard most often are "there are no end markets," "it's too dirty to recycle" and "no one's recycling foam." Here's what we know to be true.

On the claim that there are no end markets, we know that the end markets may not be as robust as PET and polypropylene, but we do know they exist and have tremendous opportunity. In 2014, we commissioned a study to understand what kind of demand there was for recovered polystyrene, both rigid and foam.

What we found was very encouraging. We identified over 100 processors and end users looking for recycled polystyrene in the U.S. and Canada. Research also indicated that increased demand for recycled polystyrene would be roughly six and eight percent annually for the next few years.

Foodservice Packaging
The Sensible Solution®

As to the second myth that foam is too dirty to recycle, well, that, too, is simply untrue and not to be believed. As part of FPI's broader efforts to recycle all paper and plastic cups and containers, we commissioned 2 studies in 2013 and 2014. The studies looked at food residue on to go containers compared to food packaging like margarine tubs, peanut butter and spaghetti sauce jars, etc., collected in residential curbside recycling programs in Boston and Delaware. In both cases, the food residue found on foodservice packaging was comparable to the commonly recycled food packaging items.

And, just to set the record straight when people say you can't recycle foam foodservice packaging because it's dirty and you have to wash it… ALL plastics are washed during the recycling process. This is not an extra step that sets foam apart from other recyclable plastics.

On the third myth that no one's recycling foam, that couldn't be further from the truth. In fact, there are over 200 cities that include foam foodservice packaging in their curbside recycling programs, including Los Angeles, San Antonio, Denver, Sacramento, Tampa and Salt Lake City. You might also be interested to know that there are currently more cities that recycle foam than have banned it.

I'll admit there are too few cities recycling foam, but we're doing something about it. Our Foam Recycling Coalition offers grants to start, or expand, foam recycling programs. Their efforts are not very different than the industry groups that have come before them. The aluminum industry did this in the 1970s to get more cans recycled, plastics companies did this in the 1990s to get bottles and jugs added to recycling programs and most recently, the carton manufacturers have made investments to get their products recycled.

The common thread is that often when a new product is added to the recycling stream, someone has made an investment to make it happen. Foam is no different.

The industry has offered to make the investments to get foam recycling started in New York City. All we need now is approval to add this material to the city's recycling program.

For all these reasons, we respectfully ask that you support Intro 1480.

FOODSERVICE PACKAGING INSTITUTE®

7700 Leesburg Pike, Suite 421, Falls Church, VA 22043
tel (703) 592-9889 fax (703) 592-9864
email fpi@fpi.org web www.fpi.org

Comments to
The New York City Council
Committee on Sanitation and Solid Waste Management
Hearing on Int No 1480
May 12, 2017

Good afternoon, Chairman Reynoso and council members. My name is Natha Dempsey, and I am vice president of the Foodservice Packaging Institute. My association represents the foodservice packaging industry, including many manufacturers of foam cups and take-out containers. I am here today to ask for your support of Intro 1480 designating foam polystyrene as recyclable in New York City.

We strongly encourage all efforts to recycle foam based on our extensive research about and experience with foam recycling over the last several years.

In 2014, foam foodservice packaging manufacturers and their suppliers came together to form the Foam Recycling Coalition. This group, housed under the Foodservice Packaging Institute, has been working voluntarily to expand the recycling of foam foodservice packaging across the U.S. and Canada.

Through our work, we know there are many myths about foam recycling. The three arguments we have heard most often are "there are no end markets," "it's too dirty to recycle" and "no one's recycling foam." Here's what we know to be true.

On the claim that there are no end markets, we know that the end markets may not be as robust as PET and polypropylene, but we do know they exist and have tremendous opportunity. In 2014, we commissioned a study to understand what kind of demand there was for recovered polystyrene, both rigid and foam.

What we found was very encouraging. We identified over 100 processors and end users looking for recycled polystyrene in the U.S. and Canada. Research also indicated that increased demand for recycled polystyrene would be roughly six and eight percent annually for the next few years.

Foodservice Packaging
The Sensible Solution

As to the second myth that foam is too dirty to recycle, well, that, too, is simply untrue and not to be believed. As part of FPI's broader efforts to recycle all paper and plastic cups and containers, we commissioned 2 studies in 2013 and 2014. The studies looked at food residue on to go containers compared to food packaging like margarine tubs, peanut butter and spaghetti sauce jars, etc., collected in residential curbside recycling programs in Boston and Delaware. In both cases, the food residue found on foodservice packaging was comparable to the commonly recycled food packaging items.

And, just to set the record straight when people say you can't recycle foam foodservice packaging because it's dirty and you have to wash it… ALL plastics are washed during the recycling process. This is not an extra step that sets foam apart from other recyclable plastics.

On the third myth that no one's recycling foam, that couldn't be further from the truth. In fact, there are over 200 cities that include foam foodservice packaging in their curbside recycling programs, including Los Angeles, San Antonio, Denver, Sacramento, Tampa and Salt Lake City. You might also be interested to know that there are currently more cities that recycle foam than have banned it.

I'll admit there are too few cities recycling foam, but we're doing something about it. Our Foam Recycling Coalition offers grants to start, or expand, foam recycling programs. Their efforts are not very different than the industry groups that have come before them. The aluminum industry did this in the 1970s to get more cans recycled, plastics companies did this in the 1990s to get bottles and jugs added to recycling programs and most recently, the carton manufacturers have made investments to get their products recycled.

The common thread is that often when a new product is added to the recycling stream, someone has made an investment to make it happen. Foam is no different.

The industry has offered to make the investments to get foam recycling started in New York City. All we need now is approval to add this material to the city's recycling program.

For all these reasons, we respectfully ask that you support Intro 1480.

NRDC

STATEMENT OF THE NATURAL RESOURCES DEFENSE COUNCIL

BEFORE THE NEW YORK CITY COUNCIL

COMMITTEE ON SANITATION AND SOLID WASTE MANAGEMENT

IN OPPOSITON TO THE INDUSTRY-BACKED PROPOSAL

TO "RECYCLE" DIRTY POLYSTYRENE FOAM CONTAINERS – INTRO 1480

May 12, 2017

Good afternoon, Chairman Reynoso and members of the Committee. My name is Eric A. Goldstein and I am New York City Environment Director at the Natural Resources Defense Council ("NRDC"). As you know, NRDC is an international, non-profit legal and scientific organization that has been active on a wide range of environmental health, natural resource protection and quality-of-life issues since its founding in 1970. New York City is NRDC's home town and we have conducting a wide ranging program to safeguard the city's environment and its residents across all five boroughs for more than four decades. We have paid special attention to the issue of solid waste because of the impacts of waste generation and disposal on our climate, our air, our water and our neighborhoods.

We appreciate the opportunity to testify today regarding Intro. 1480 -- a bill that seeks to require the recycling of dirty polystyrene foam food and beverage containers in New York City.

In short, we strongly oppose this legislation and support instead legislation that would ban on polystyrene foam food and beverage containers; that is the only sensible and proven way to get rid of the billions of foam containers that constitute a first class environmental nuisance throughout our city.

As for Intro 1480, this industry-backed proposal is a wolf in sheep's clothing.

To be sure, at first blush, it sounds like recycling of polystyrene foam food and beverage containers would be a good thing. And indeed NRDC has been a staunch supporter of recycling here in New York City and around the nation for many years. We were one of the leading NGO organizations supporting passage of the city's 1989 landmark recycling law. We represented several city councilmembers and citizens in neighborhoods from the Bronx to State Island in suing the Giuliani Administration in the 1990s to enforce the recycling law. And we have worked with the Sanitation Department in recent years, and especially under Commissioner Kathryn Garcia, to expand and enhance the city's recycling programs.

But Intro 1480 would not advance these goals. Intro 1480 would not improve recycling. Intro 1480 is an attempt to block the real solution to the litter and environmental problems posed by dirty polystyrene foam – which is to ban it, as more than 100 communities around the nation have already done.

I. Dirty Polystyrene Foam – A Litter and Pollution Problem

One thing is clear for starters: dirty polystyrene foam food and beverage containers pose litter and environmental challenges that are disproportionate to their weight in the city's municipal waste stream.

First, they contribute pollution to virtually every New York City neighborhood. A large percentage of these foam containers end up as street litter. Their brittle composition means that they readily break into tiny pieces. They litter our streets, our parks, and our beaches. And these polystyrene nuggets enter our storm drains and wash into our surrounding waterways. Fish, birds and other marine species often mistake these foam bits as food. You will hear direct evidence of such pollution from other witnesses today. And since polystyrene containers are made from non-renewable fossil-fuels, there manufacture contributes to global warming emissions.

Second, dirty polystyrene foam food and beverage containers interfere with the city's expanding effort to compost all of our organics (food and yard waste). The Sanitation Department has wisely begun what is becoming the largest program in the nation to sustainably dispose of the food scraps and yard waste, which make up about one third of our city's waste stream. In order for these organics to be beneficially reused, however, they must not contain non-compostable materials. Unfortunately, polystyrene foam food and beverage containers are among the materials that do contaminate the city's organics waste stream.

II. "Recycling" Dirty Foam is Impractical, Uneconomical and Unwise

The plastics industry, which has been conducting some heavy-duty lobbying to secure quick passage of Intro 1480, argues that the answer to the polystyrene foam litter and pollution problem is recycling. Environmental organizations love recycling. But recycling is not the answer for dirty polystyrene foam. The reason is simple --- this material cannot be effectively recycled in New York City or indeed anywhere within the New York region. This is the conclusion reached in 2013 by the independent, Vermont-based municipal consultants DSM Environmental, who conducted a nationwide analysis for NRDC. It is the conclusion of Sanitation Commissioner Kathryn Garica in 2013, after she and her department completed a one year review of recycling opportunities for dirty polystyrene foam. And it is the conclusion of former New York City Sanitation Commissioner Brendan Sexton who re-analyzed the entire subject in 2015 and 2016.

The incontrovertible evidence is this – not a single big city in America has successfully implemented a recycling program for dirty polystyrene foam food and beverage containers. Not one. And it is not for lack of trying. Simply stated, there are no viable, real-world markets for dirty polystyrene foam.

Here is what the city of San Jose says on its official website ("sanjoseca.gov") on the question of recycling dirty polystyrene foam:

"Q: Why not just recycle foam service ware?"

"A: San Jose is nationally recognized for having one of the most innovative recycling programs. The City and its partner recycling companies have made several attempts to include EPS recycling as part of the City's recycling program; however, there are no effective and efficient ways to recycle EPS. This is due to the low market value of the material *and the high rate of food contamination, which makes it impossible to recycle."]*

III. Bans on Polystyrene Foam Containers are Working from Coast to Coast

There is an answer to the problems posed by dirty polystyrene foam food and beverage containers – implement a ban that will prompt restaurants and other food service establishments to switch to environmentally preferable substitutes. Indeed, this is happening around the nation, with more than 100 communities from coast to coast already adopting such bans. Indeed, the cities with the highest recycling rates in the nation – Seattle, San Francisco and Portland – have also led the way in implementing bans on polystyrene food and beverage containers.

In addition, such bans have been adopted by other jurisdictions like Minneapolis and Washington D.C. And right here in New York State, bans on polystyrene foam have been adopted in Albany County (for large chain stores) and Ulster County. And everywhere these bans have implemented, streets are cleaner, less pollution is entering local rivers and streams, and restaurants and other food providers are surviving just fine and they are conducting their businesses in a more sustainable way.

Fortunately, the City Council has the opportunity to follow suit and adopt legislation that would ban these troublesome foam containers. Intro 1596 has just been introduced. Co-sponsored by Councilmembers Brad Lander, Antonio Reynoso, Margaret Chin, Stephen Levin, Helen Rosenthal and Daneek Miller, this new bill would move New York City on the path that has been taken already by some of the nation's most livable and most sustainable communities.

We strongly urge their fellow councilmembers to join with these environmental champions in co-sponsoring this sensible and progressive alternative to the ill-advised, industry-backed Intro 1480. In addition to the substantive benefits that would come from banning these foam containers, adoption of a ban bill would also be an important symbolic step forward. It would send the signal that New York is on its waste to becoming a less wasteful city.

May 12, 2017

New York City Council
Committee on Sanitation & Solid Waste Management
250 Broadway
New York, NY 10007

RE: Int. No. 1480- Addition of expanded polystyrene in residential recycling program

Dear Honorable Committee Members,

I'm Alan Shaw and I own Plastic Recycling, Inc., a company based in Indianapolis, Indiana. As you may have heard, we are eager to purchase ALL of New York City's recycled foam and solid polystyrene. At our brand-new, up-and-running facility, we currently have the ability and the capacity to recycle every piece of polystyrene that Sims could possibly send us. We want all the recovered polystyrene we can get, including without limitation NYC's food-contaminated foam—we have enough demand for our recycled polystyrene to handle a 100% recycling rate for a city *five times* larger than New York.

I started Plastic Recycling in 1988, and my mission was to take on projects that no one else wanted to handle. We started out by taking food-contaminated polystyrene yogurt cups with foil laminated to it and figured out how to recycle it. Since then, we have begun recycling polystyrene CD's, DVD's, foam cups, take-out containers, foam plates, and even coat and clothes hangers. We currently profitably recycle over *80 million pounds of foam and solid polystyrene a year*. We are growing so quickly that we are recycling 20 million more lbs. a year than we were when I testified before you in in 2013!

We will be able to sell your recycled foam—all of it—even your recycled dirty post-consumer foodservice containers, including foam clamshells stained with food, egg cartons, foam plates with food residue and grease, foam smoothie cups with smoothie residue, etc. One of the best parts of our plan, however, is that we will buy the City's *solid* (or "rigid") polystyrene, too, which the City and Sims already currently collect "for recycling" but then send to landfills.

We supply companies large and small, including 3M and Rubbermaid, with recycled polystyrene, which they use for office supplies and other products. But we need more supply—and absolutely *none* of NYC's material would be landfilled or go to waste. In fact, we have so much demand that we built a new facility in 2015 specifically designed to process post-consumer food contaminated foam and solid polystyrene from residential recycling programs just like yours. Examples of post-consumer material we currently recycle include: block foam (the type used to package new TVs), egg cartons, meat trays, ice chests, salad trays, coffee and soda lids, red Solo cups, CD cases, etc.

We currently recycle post-consumer material from residential programs in California and Canada. We have also already received "test" bales from Sims comprised of "mixed" foam and solid polystyrene—exactly the type of bale that Sims would send us if NYC starts collecting this material officially. We successfully recycled the test bales and sold the processed material to our customers.

We hope you will appreciate the growth we have been experiencing, our investments to process dirty foam, and our desire to purchase your material. We respectfully ask you to support Intro-1480.

Sincerely,

TESTIMONY OF SANDRA MEOLA, NY/NJ BAYKEEPER

NYC INT. 1480-2017

My name is Sandra Meola of NY/NJ Baykeeper, an environmental advocacy group fighting for clean, fishable and swimmable waterways surrounding all five NYC boroughs and Northern and Central New Jersey. NY/NJ Baykeeper strongly opposes Int. 1480-2017 which would designate polystyrene as recyclable.

In 2015, Baykeeper executed a research study to quantify and classify plastic particles within NY-NJ Harbor waters. Based on our sample collection, at least 165 million plastic particles are floating in Harbor waters with the most abundant type of plastic being polystyrene foam at 40 percent. Not too surprisingly, since once in our waterways, polystyrene quickly breaks up into tiny pieces and is mistaken by fish for food.[1] As a type of plastic, polystyrene has the ability to adsorb contaminants present in our waterways such as PCBs, DDT, oil, and pesticides. Thus, aquatic life ingesting plastic are also ingesting these contaminants that bioaccumulate in our ecosystems and move them up the food chain.[2] Not to mention, toxic benzene and styrene are already contained within the polystyrene packaging we eat and drink out of.

This industry-backed bill is a step backwards for sustainable policy and waste management. This bill is also an attempt by the plastic manufacturing industry to prevent a new polystyrene ban bill as was done in 2013. Polystyrene can not be cost-effectively recycled, although lobbyists will try to argue otherwise.3 To back this point up, according to *The New York Times*, Dart Container Corporation and the Chemistry Council spent close to 1 million dollars to defeat a city-wide ban of polystyrene at New York City food service establishments in 2013.

Not one city in the United States has successfully implemented a recycling program for polystyrene. We support the City's waste reduction initiatives but strongly urge council members to put NYC residents and our environment over industry profits and kill this bill and instead introduce new legislation that would ban polystyrene foam packaging city-wide in line with the over 100 communities that have already banned in.

Thank you for your time.

---

[1] Ingested Microscopic Plastic Translocates to the Circulatory System of the Mussel, http://pubs.acs.org/doi/abs/10.1021/es800249a?journalCode=esthag&

[2] Bakir, A., Rowland, S.J., Thompson, R.C. 2014. Transport of persistent organic pollutants by microplastics in estuarine conditions. Estuarine, Coastal, & Shelf Science 140:14-21.

[3] NYC Can't Recycle Polystyrene Foam, Natural Resource Defense Council, https://www.nrdc.org/experts/eric-goldstein/nyc-cant-recycle-polystyrene-foam-food-containers-ban-only-sensible-solution

May 12, 2017

New York City Council Committee on Sanitation and Solid Waste Management

Dear Chairman Reynoso:

My name is Ling Tsou. I'm a co-founder of United for Action, a grassroots group in New York City working to end our addiction to fossil fuel and nuclear power and advocating for renewable energy.

We oppose Int 1480 which would classify expanded polystyrene "EPS", commonly referred to as Styrofoam as "recyclable". Designating EPS as recyclable would mean that New York City residents would be required to put EPS in their curbside recycling bins and the city would be required to collect and process it. The Department of Sanitation looked into recycling these foam containers and found that they could not be recycled in an environmentally effective or economically feasible manner.

EPS is brought to us from the oil well through a chemical process. It does not decompose. Animals do not recognize polystyrene foam as an artificial material and may even mistake it for food. Polystyrene foam blows in the wind and floats on water, due to its specific gravity. It can have serious effects on the health of birds or marine animals that swallow significant quantities.

The impact on the environment of everyday materials is increasingly important if we are to reduce our carbon footprint and protect our natural heritage for future generations. 2016 was the hottest year on record, setting a new high for the third year in a row, with human activities driving climate change. Climate change is the most critical issue of our generation. With our national administration taking us backwards in the fight against climate change, it is now even more vital that New York City step up our defense of the environment.

The City Council already banned EPS foam containers in 2013. Since that time no major municipality has successfully created a curbside residential EPS recycling program. In fact, the trend has been strongly in favor of bans, not recycling. To date, almost one hundred cities in the U.S., including Washington, D.C. have adopted EPS food container bans.

We urge the City Council not to succumb to industry lobbying and to not pass Int 1480 but to move forward with a ban on EPS foam containers.

Thank you.

Ling Tsou

United for Action

http://www.unitedforaction.org/

New York City

To: NYC City Council
Committee on Solid Waste
May 12, 2017
Comments on Intro 1480

Dear Elected Officials, Council persons, and Concerned Citizens

The Natural Resources Protective Association (NRPA) of Staten Island urges you to reject the ill advised legislation Intro 1480, which urges NYC to implement recycling of Polystyrene (styrofoam) products. There have been documented studies proving that styrofoam is not economically feasible for recycling purposes. Instead, we (NRPA) urge the Council to ban Polystyrene outright, because it's an insidious source of pollution, from its creation where nasty, poisonous organochlorines are injected into waterways, through its demise, where it crumbles into tiny pieces that our wildlife often mistake for food, leading to their downfall. The Polystyrene pollutes our rivers, wetlands, forests, streets, landfills, degrading our collective quality of life. NRPA removes thousands of pounds of debris from our parks and beaches every year, over one-tenth is styrofoam. We urge you to join the cities and communities of our country that recognize that Polystyrene is not recyclable, and should be banned in NYC.

Thank you.

Natural Resources Protective Association
PO Box 050328
Staten Island, NY 10305

FOR THE RECORD

FOR THE RECORD

Jennie Romer
attorney and environmental policy consultant
P.O. Box 48
New York, NY 10159
jennie@plasticbaglaws.org

Council Member Antonio Reynoso
Chair – Committee on Sanitation and Solid Waste Management
New York City Council
250 Broadway, Suite 1740
New York, NY 10007

Re: OPPOSE City Council Bill No. 1480 - expanded polystyrene designation

Council Member Antonio Reynoso,

I'm a constituent in your district and I'm writing to ask you to oppose Bill No. 1480. I'm a national expert in single-use plastic packaging policy, mostly plastic bags and EPS food containers. I've spent a decade researching the harms of EPS, including ocean plastic pollution. I spent several years leading the Clean Seas Coalition, which was aimed at helping cities all over the country adopt the most effective single-use plastic reduction policies. I also monitor claims regarding EPS recycling programs and efficacy of bans.

I recently published the attached blog article on Huff Post. The article tells the story of NYC's 2013 EPS ban, the ongoing lawsuit, and the money spent by Big Plastics to maintain a marketplace for EPS. Here's a link:
http://www.huffingtonpost.com/entry/d%C3%A9j%C3%A0-vu-debate-over-foam-food-containers-returns-to_us_590a8dbde4b05279d4edc2b3

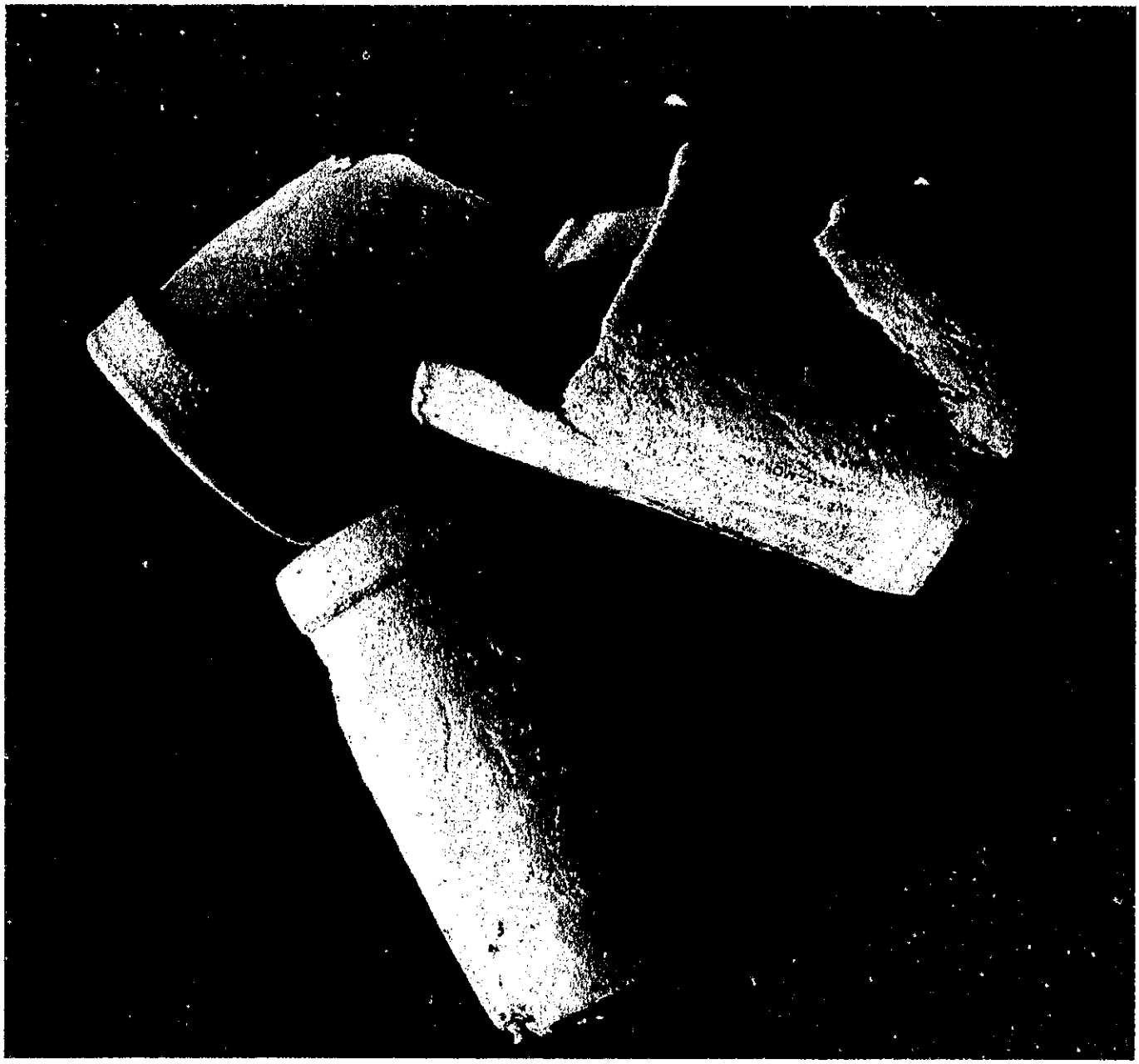
Please contact me if you have any questions or concerns.

Sincerely,

Jennie Romer

Déjà Vu: Debate Over Foam Food Containers Returns To NYC Council

05/04/2017 11:59 pm ET | **Updated** 5 days ago



Jennie Romer

Tattered expanded polystyrene foam cup litter collected at a NYC waterfront park. EPS food service containers are seen as harmful to the environment in part because they're lightweight and brittle, making them especially prone to becoming windblown litter and difficult to clean up.

The New York City Council is currently considering a bill to designate expanded polystyrene (EPS, commonly referred to as Styrofoam) as recyclable. The NYC foam food container debate may sound vaguely familiar.

That's because exactly the same debate took place at the NYC Council in 2013. This is a brief summary of what happened then and why the issue is has reemerged.

The 2013 NYC EPS Ban

The NYC Council adopted a ban on all food service EPS containers as well as EPS packing peanuts in December 2013. At that time, then-Mayor Bloomberg was eager to have the EPS ban be part of his environmental legacy, stating in his State of the City speech that EPS is "not just terrible for the environment but it's another thing that's terrible for the taxpayers ... [Styrofoam] increases the cost of recycling by as much as $20 per ton because it has to be removed" (at 58:35).

However, as the 2013 City Council session came to a close the EPS ban bill appeared to be short on votes. The ban was the subject of massive opposition lobbying efforts by Dart Container Corporation (the world's largest manufacturer of foam cups and containers) and The American Chemistry Council (a powerful industry trade association for American chemical companies). These two groups spent big to capture the attention of City Council. Dart donated $38,535 to the campaign accounts of fourteen NYC politicians and spent at least $188,161 in disclosed NYC Council lobbyist fees. The American Chemistry Council made three contributions totaling $824,500 during the 2013 election cycle to fund the newly formed "Restaurant Action Alliance NYC," which opposed the ban and eventually became the lead plaintiff in a lawsuit against the City regarding the ban.

Dart Container Corporation focused on the argument that EPS is recyclable, lobbying to delay adoption of a ban by the City Council until after Dart had a chance to show that recycling could work and by offering to pay for an EPS recycling program for the NYC. Environmental advocates pointed out that similar food service EPS recycling efforts had failed elsewhere. City Council Members then proposed a compromise bill. Under the compromise bill, the ordinance would be adopted immediately, but a clause was added stating that Dart would have a year to demonstrate to the Department of Sanitation that such a recycling program would be effective.

At the end of that year, the Sanitation Commissioner would be required to make a Determination as to whether or not EPS food service and loose fill packaging could "be recycled at the designated recycling processing facility at the South Brooklyn Marine Terminal ***in a manner that is environmentally effective, economically feasible, and safe for employees***." Additionally, if the Commissioner were to find that the EPS at issue could be recycled in such a manner, the ban would not go into effect and the Commissioner would have to adopt rules designating EPS as a recyclable material and thus require source separation.

At the time of the adoption of the ban, environmental advocates were confident that the likelihood that Dart could show such a program was feasible was so infinitesimal as to not be a concern, because successful large-scale curbside recycling programs for food service EPS had never been established anywhere else. Dart could only point to their own incredibly labor-intensive sponsored demonstration programs for EPS recycling, which were much smaller in scale. The definition of the "economically feasible" prong required that the Commissioner "shall include consideration of markets for recycled material" and there was no real market for recycled polystyrene generally, much less dirty food service EPS. The compromise clause was seen by most environmental advocates as only a slight delay in implementation of the ban.

Jennie Romer

Polystyrene #6 resin code on the bottom of an EPS cup. Contrary to popular belief, the chasing arrows code does not mean that the material is recyclable, it just identifies the resin type.

The Commissioner's Determination & the Lawsuit That Followed

Sanitation Commissioner Kathryn Garcia released her Determination in late 2014, finding that:

". . . DSNY concluded that there are currently no established markets to purchase and recycle the EPS that would be collected in the MGP program, which is considered too 'dirty' by current buyers. As such, a determination of recyclability fails on the basis of environmental effectiveness and economic feasibility. . ."
Thus, NYC's EPS ban was scheduled to go into effect in July 2015, with enforceable fines to be implemented later in the year. Then, in April 2015, Restaurant Action Alliance NYC and several EPS manufacturers sued the City claiming that the Sanitation Commissioner's Determination was arbitrary and capricious. (New York State Supreme Court Index No. 100734-2015.)

On September 21, 2015, a New York state court Justice Margaret A. Chan ruled that the Sanitation Commissioner's Determination was arbitrary and capricious, and thus the ban could not go forward. Specifically, the court found that "the Commissioner did not clearly state the basis of her conclusions when the evidence

contrary to her findings were clearly before her" The court's ruling is primarily based on Dart's assertion that it would pay for new recycling sorting machines for the City, pay for employees to man the machines, and purchase the EPS recovered by Sims (the City's contractor) for five years at $160/ton — a program estimated to cost Dart $23M.

The Court acknowledged that by proposing this recycling pilot Dart would be acting in Dart's own self-interest but the Court would not accept the Commissioner's finding that dirty EPS has no viable recycling market. The ruling essentially asserted that the City must accept Dart Container Corporation's pilot program in lieu of a ban unless the Commissioner stated more clearly why that shouldn't happen:

"The Commissioner's concern is not justified given the abundant evidence showing a viable and growing market for not just clean EPS but post consumer EPS material; that EPS recycling and the post-consumer EPS market is beyond the pilot program stages or still paddling in untested waters; and that Dart's financial investment of $23M dollars to DSNY benefits the City of New York, even if it is a bigger benefit to Dart's self-interest."
The Court ordered the Determination annulled and vacated as arbitrary and capricious, remanding to the Commissioner for reconsideration and determination consistent with the court's decision.

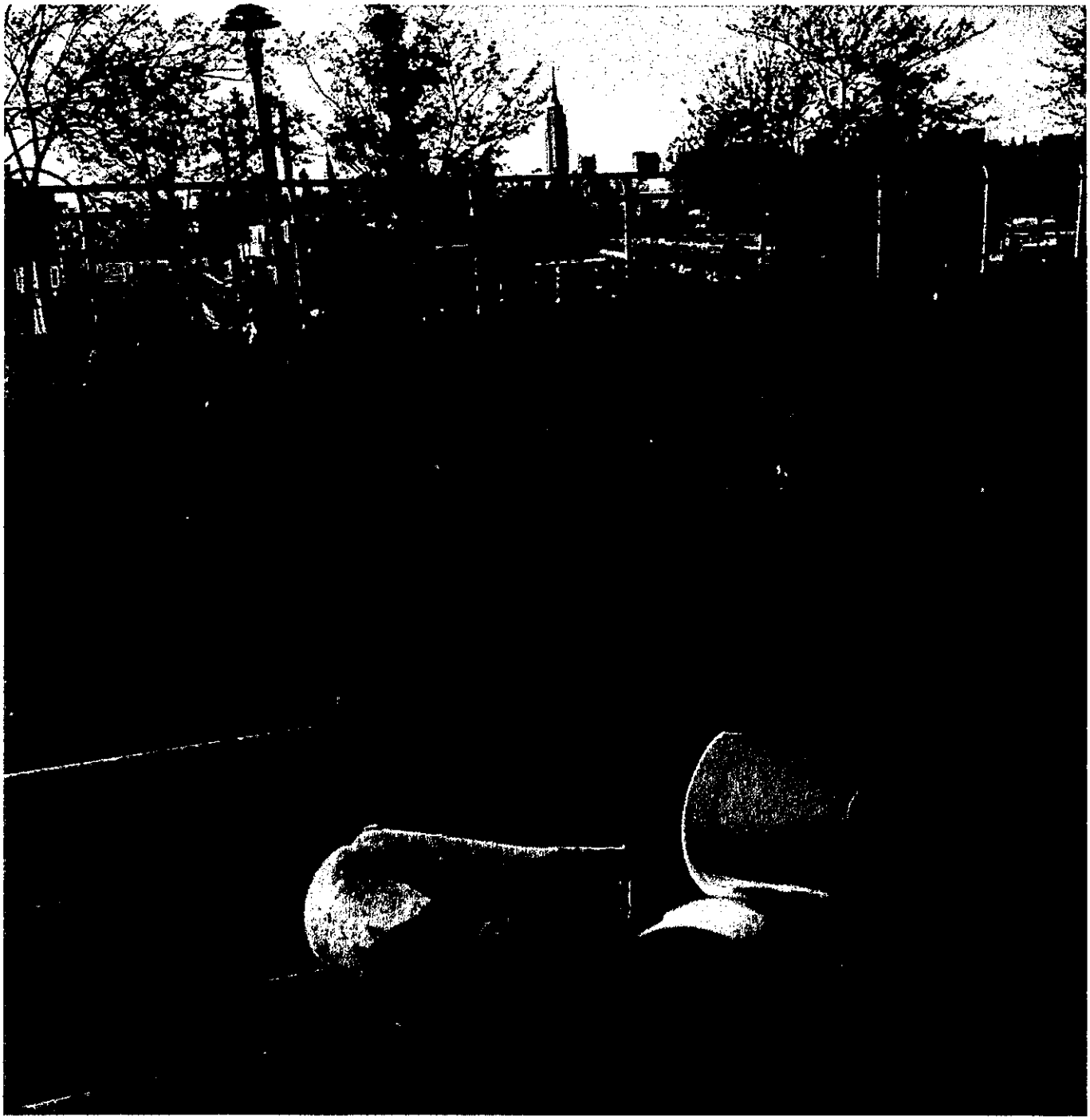
Ongoing Lawsuit & New Bills Before City Council

The City appealed the lower court ruling, but the Court of Appeals declined to take up the case. This meant that the case was remanded to the Commissioner to draft a revised Determination, after further research and consideration, explaining in greater detail the reasoning behind the Determination so as to overcome the claim of being arbitrary and capricious. That lawsuit is still pending and the revised Determination has yet to be submitted. The court website shows a disposition deadline of July 29, 2017.

On March 1, 2017, NYC Council Member Fernando Cabrera introduced a bill that would designate EPS as recyclable. Designating EPS as recyclable would mean that residents would be required to put EPS in their curbside recycling bins and the City would be required collect and process it. During the over three years that passed between when the City Council passed its EPS ban and today no major municipality has successfully created a curbside residential EPS recycling program. In fact, the trend has been strongly in favor of bans, not recycling. To date, almost one hundred cities in the U.S., including Washington DC, have adopted EPS food container bans.

Just as they'd done in the previous round, Dart is again spending big to capture the attention of City Council. Between 2014 and early 2017, Dart spent over $500,000 in disclosed lobbyist fees including $40,000 in payments to former Council Member Robert Jackson in 2016. Also, according to the NYC Campaign Finance Board, Dart's CEO's wife — Ariane Dart — gave $2,750 to Council Member Fernando Cabrera in the 2017 election cycle. Ariane Dart also contributed to City Council Speaker Melissa-Mark Viverito ($4,950), Bronx Borough President Ruben Diaz, Jr ($1,000) and Council Member Rafael Espinal, Jr. ($500) so far during the 2017 cycle.

Dart appears to be gearing up for another expensive showdown at NYC Council to fight for an unregulated marketplace for its product.



Jennie Romer

Tattered expanded polystyrene foam cup litter collected at a NYC waterfront park. EPS food service containers are seen as harmful to the environment in part because they're lightweight and brittle, making them especially prone to becoming windblown litter and difficult to clean up.

CITIZENS COMMITTEE FOR NEW YORK CITY

May 12, 2017

Dear Honorable Members of the New York City Council,

My name is Saleen Shah and I am on the staff of Citizens Committee for New York City. As many of you know, Citizens Committee is a 40 year old citywide nonprofit founded during the fiscal crisis of 1975.

Part of our mission is to fund volunteer group initiatives comprised completely of ordinary New Yorkers with grants, especially in the most underserved parts of the city. Today, 60 percent of the 400 or so projects we fund each year have directly to do with these special New Yorkers, working in clusters of volunteer groups, protecting our urban environment through community and school improvement projects and beautifying many of this city's most polluted communities, eventually making them safer as well. It is important to note Citizens Committee has always supported communities of color who are hit disproportionately and the hardest by the effects of environmental pollution and degradation, with neighborhood and school improvement grants.

Among the current sponsors of Intro 1480, Citizens Committee has devoted its Neighborhood Grant resources –cash grants for neighborhood and school improvement and project planning support -- to 460 grassroots groups and volunteer groups working in their districts over the past three years alone. More specifically, the primary focus of 276 of those grassroots initiatives is environmental protection, environmental justice and neighborhood beautification. In the most basic terms, local constituents are actively helping to improve the polluted urban environment through their grassroots efforts, with no end to their outstanding, often-unheralded cleanup efforts.

Citizens Committee believes unequivocally that polystyrene foam food and beverage containers are a problem for the communities we serve and for our municipal government. These containers create litter problems and detract from the cleanliness of the neighborhoods we work in. Parks, beaches and even our local waterways suffer from polystyrene foam litter. Like plastic bags, polystyrene foam food and beverage containers are a product that is useful for several minutes but that remains in the environment for centuries.

In addition, New York City spends millions and millions of dollars annually to clean public areas. Every practical-minded New Yorker realizes that the city's limited natural recreation areas have high economic value. Why should these areas be littered with polystyrene foam, when there are more environmentally friendly substitutes available?

We recommend that the City Council take the sensible step of getting rid of polystyrene foam food and beverage containers, like communities around the nation from San Francisco to Washington DC have already done. In these cities and around the nation, restaurants and other food establishments have been able to substitute more environmentally friendly food and beverage containers, including ones made from things like paper and compostable materials.

At Citizens Committee, we like recycling. But there is no real market for dirty polystyrene cups and clamshells in New York. And no big city around the nation has successfully implemented a recycling program for dirty foam.

For all these reasons, we oppose Intro 1480 and encourage the City Council to advance legislation that would ban dirty polystyrene foam, so that the neighborhoods – for the most part neighborhoods we serve across New York City – will get a break from a product whose time has come and gone. After all, if the South American nation of Guyana's leaders can be progressive-minded enough to ban it, so can City Council.

Respectfully,

Saleen T. Shah
Director of Communications & Public Affairs

ToxWorks

George Cruzan, Ph.D., D.A.B.T.

1153 Roadstown Road
Bridgeton, NJ 08302
phone: 856-453-3478
fax: 856-453-3479
e-mail: ToxWorks@aol.com

May 12, 2017

Written Testimony in support of proposed amendment to the administrative code of the city of New York, sections 16-324(f) and 16-329.

1. Credentials

George Cruzan, PhD. BA in chemistry 1965 The King's College. PhD in biochemistry 1969 Purdue University. Professional toxicologist 1976 to present (41 years), Diplomate of American Board of Toxicology 1980-2015. President of ToxWorks (toxicology consulting firm) 1995 to present (22 years).

Studying health and environmental effects of styrene and leading $20 million research program, 1989 to present (28 years)

2. Polystyrene

Polystyrene is a polymer synthesized by connecting many molecules of styrene together, and should not be confused with the styrene. Styrene is a liquid; polystyrene is a solid. Although the names sound familiar and may be confusing, styrene and polystyrene are different and have completely different properties. Styrene is reactive; polystyrene is inert. In other words, polystyrene does not have the properties of styrene. This is true of all polymers; they are different from the monomer they are synthesized from. A common example is the difference between sugar and wood. Sugar is a monomer with distinct properties. Join many sugar molecule together and you get cellulose, the main polymer in wood.

Thus the health effects of polystyrene should be based on polystyrene, not on styrene. There are no adverse health effects on humans from polystyrene.

Polystyrene contains some residual unreacted styrene. Typical products contain less than 300 ppm.

3. Sources of Styrene Exposure

Styrene is everywhere in minute amounts. Ambient air always contains styrene from automobile exhaust, cigarette smoke, wood smoke, plant emissions. Average concentration is about 4 microgram (ug)/ cubic meter (m^3). Typical human breathing is 20 m^3/day. Therefore, normal inhalation of ambient styrene from air is 80 ug/day (4 ug/m^3 * 20 m^3/day).

Styrene is naturally present in several foods. It has been measured in foods that have not had contact with polystyrene containers. It is present in the highest concentration in coffee, cinnamon, beer and nuts. Based on average consumption, it is estimated that the average person ingests 9 ug styrene per day from naturally occurring styrene in their food.

There is a small amount of unreacted styrene within polystyrene; some of this may migrate into food in the container. The residual styrene will migrate from areas of higher concentration to lower areas of concentration. The only styrene that can migrate into food or drink is the styrene that is at the interior surface of the cup. As this styrene migrates from the surface of the cup into the food or drink, additional molecules of styrene migrate to the surface and then into the food. About half of the unreacted styrene will migrate over time to the inside surface and half to the outside surface.

The results of a 2013 study show that the maximum amount of styrene that could migrate from polystyrene food-contact packaging is calculated to be 6.6 micrograms (about 1 millionth of a teaspoon) per person per day. As mentioned above, several foods (e.g., coffee, cinnamon) naturally contain styrene; the average consumption of styrene from natural food soucres is about 9 migcrograms/day. The FDA's acceptable daily intake of styrene is calculated to be 90,000 micrograms per person per day. This demonstrates a safety factor of more than four orders of magnitude (10,000 times). Link: https://plasticfoodservicefacts.com/main/Safety/Safety-of-PS-Foodservice-Products

Total styrene migration from all PS foam food service products results in ingestion of 4 ug/day styrene.

Total styrene exposure averages about 96 ug/day.

4. Health Effects of Styrene

Fiberglass workers have highest exposures, especially in the past. Exposure greater than 50 ppm for 8 hrs may cause headaches, or slowed reaction time. Exposures greater than 30 ppm 8 hr/day for more than 10 years may cause a slight reduction in hearing.

US National Toxicology Program lists styrene as reasonably anticipated to be a human carcinogen in Report on Carcinogens. This is based largely on increased lung tumors in

mice exposed to styrene for 2 years. Recent research has demonstrated that this is caused by specific metabolism of styrene in mouse lung, which does not occur to a significant extent in rats or humans.

An enzyme CYP2F2 is present in high concentration in mouse lungs. It causes the formation of different metabolites from styrene. In genetically modified mice that do not produce CYP2F2, styrene has not effect in the lung. Rats and humans have much lower levels of CYP2F in the lung and do not have any lung toxicity from styrene.

5. Risk Assessment

Total styrene naturally in food results in ingestion of 9 ug/day styrene. Total styrene migration from all PS foam food service products results in ingestion of 4 ug/day styrene. Inhaled styrene from ambient air results in intake of 80 ug/day styrene. The total styrene intake is about 96 ug/day. Banning PS foam products would reduce that by less than 5% (4 ug/96 ug).

US EPA acceptable exposure is 20,000 ug/day. Exposure from PS foam is less than 4 ug/day. 5000 fold safety factor.

The amount of styrene migrating from PS foam foodservice products is so small that there is no measurable risk. Styrene from foam is not a health issue. In conclusion, no government agencies consider polystyrene to be a carcinogen, nor to pose any health risk.

George Cruzan

George Cruzan, PhD

Statement regarding Intro 1480 – 5/12/17

FOR THE RECORD

I am Edie Kantrowitz, and I am speaking on behalf of NYC Friends of Clearwater in opposition to Intro 1480. EPS foam, especially post-consumer EPS foam, is not recyclable and this material should be banned. While it might seem desirable to think that we could recycle EPS foam, no major municipality has yet been able to successfully create a curbside residential EPS recycling program, and almost one hundred cities in the U.S., including Washington DC, have instead adopted EPS food container bans. Dirty polystyrene foam is not a material that can be cost-effectively recycled in an environmentally sensible manner. Thus, such foam should not be defined as recyclable in the City's Administrative Code. Please work instead towards legislation that would ban the use of EPS food and beverage containers in NYC. Thank you.

Edie Kantrowitz
333 McDonald Avenue - #5D
Brooklyn, NY 11218
reweaving@hotmail.com
718-854-8545

Good afternoon, our names are Fred DeFazio – Kevin Haggerty and thank you for the opportunity to testify on behalf of Genpak in support of Intro 1480 which would add EPS to the city wide curbside recycling program. We are owners of Creative Sales and Marketing, which is a manufacture's rep group and we represent Genpak in the NY Metro Area.

Genpak is a leading manufacturer in the plastic foodservice packaging industry making a wide variety of food containers, plates, bowls and platters that are used in food service applications. Our company and has been a fixture in Middletown, New York for over 40 years - an area, like much of upstate, starved for jobs and investment.

Over the past 30 years, manufacturers like Genpak have become increasingly rare in Upstate New York. Overall, 1.2 million fewer people were employed in manufacturing in New York State in 2014 than in 1970, While upstate communities realized a smaller percentage decrease in manufacturing employment that the New York Metropolitan area, they were more dependent on manufacturing. As a result, the loss of manufacturing jobs throughout upstate did more economic harm to them than the losses in the New York City area.

That is why we stood so strongly against the proposed ban on EPS. The ban would likely have resulted in significant layoffs and endangered the viability of our plant long term if other markets were not added to replace the NYC losses. In addition a ban would negatively impact and raise costs for the small business who rely on our products.

We applaud and strongly support efforts by members of the City Council to advance legislation to add EPS to the city's existing curbside recycling program. Polystyrene is 100% recyclable and is already recycled commercially in cities big and small across the nation and the globe. For instance, more than 65 communities in California alone have curbside collection to recycle polystyrene foam.

Polystyrene is safe, recyclable and cost effective. We commend the sponsors for this thoughtful and progressive legislation and urge the City Council to pass it into law.

Thank you for the opportunity today to speak.

Dear Council Member Cabrera:

We, members of the Brooklyn Solid Waste Advisory Board, a Board created by Local Law 19 in 1989 to advise the Council on matters related to solid waste reduction, would like to express our firm opposition to Intro 1480-2017.

It has recently come to our attention that the City Council has introduced this bill, which would designate expanded polystyrene (EPS), commonly referred to by the brand name Styrofoam, as recyclable. It appears that some members of the Council were persuaded to support this legislation after learning that a single EPS manufacturer located in Michigan has agreed to accept recycled EPS. We find this unfortunate, as a single facility approximately 800 miles away hardly constitutes a sustainable market for EPS; the lack of any real market is precisely why DSNY does not already recycle EPS. Indeed, we believe that the lack of recycling infrastructure for this material supports our contention that EPS—very light yet very bulky, complicating recycling logistics, and prone to disintegrate into tiny particles once it enters the waste stream-- is in fact uniquely unrecoverable.

Until an entirely impartial cost-benefit analysis can demonstrate the presence of multiple, viable, and local markets for this material, mitigating the expense to the City and allowing for recycling without adding countless truck miles to our air and roads, **we strongly encourage all Council members to vote against Intro 1480-2017**.

We would be happy to discuss this issue with you further, and we can be contacted via **swab.brooklyn@gmail.com.** Thank you.

Brooklyn Solid Waste Advisory Board

cc: CM Mark-Viverito

CIVITAS

WORKING FOR QUALITY
IN URBAN LIFE

May 12th, 2017

Statement by CIVITAS Citizens, Inc., made on May 12, 2017, before the Committee on Sanitation and Solid Waste of the New York City Council in opposition to Proposed Int. No. 1480.

Good afternoon. I am Gorman Reilly, a vice-president of CIVITAS Citizens, Inc., and I am pleased to make this statement before the Committee on Sanitation and Solid Waste on its behalf. CIVITAS opposes Proposed Int. No. 1480, which seeks to have expanded polystyrene (EPS) designated as a recyclable.

CIVITAS is a not-for-profit organization, established in 1981, dedicated to improvement of neighborhood life in East Harlem and the Upper East Side of Manhattan. Four main areas of concern are land use, public transportation, streetscape and the environment. During the past 15 years, an important focus of our environmental program has been solid waste management and, in particular, recycling. To that end we have encouraged recycling and composting in various public schools in our communities; we have sought to introduce recycling to New York City Housing Authority sites in East Harlem; and, we have promoted better recycling and composting practices in apartment buildings.

CIVITAS opposes the designation of EPS as a recyclable for these reasons:

First, the recycling of EPS is not economically feasible. The viability of a recycling program depends in great part upon the availability of a market for the recycled product. The simple fact is that there is no market for recycled EPS. This is due in no small part to the low cost of virgin EPS. The self-serving offer by the leading manufacturer of EPS to buy on a temporary basis some part of the recycled EPS to be generated by New York City is an admission that no real market for recycled EPS exists. This was the conclusion correctly reached by the Commissioner of Sanitation after affording that manufacturer ample opportunity to prove to the contrary.

Second, it is not possible to efficiently recycle EPS. No major city in the United States has opted to recycle EPS for this reason. Guidelines provided by the principal manufacturer of EPS emphasize the necessity of first scrubbing the dirty EPS containers and then placing them in separate clear plastic bags prior to collection. The key to increasing the overall recycling rate (now at 16% for New York City) is to simplify the collection process. We are now at the stage where the number of bins has been reduced to two - a blue bin for metal, glass, plastic and beverage containers and a green bin for paper and cardboard. Municipalities with higher recycling rates have done so by reducing recyclables to a single stream.

Third, the continued use of EPS, whether recycled or not, presents significant health and environmental concerns. Respected scientific authorities have designated styrene as a carcinogen. There is little question that when they come into contact with a heated food or beverage styrene and benzine chemicals leach from the container. What is more, these lightweight containers all too often end up in our streets, parks and waterways.

For these reasons CIVITAS urges that this Committee vote NO on Proposed Int. No. 1480.

1457 Lexington Avenue New York, NY 10128 Tel: 212.996.0745 Fax: 212.289.4291 www.civitasnyc.org info@civitasnyc.org

Testimony of Judith S. Weis to the New York City Council on Bill 1480

Polystyrene (EPS) and the Problem of Microplastics

Judith S. Weis, Professor Emerita, Department of Biological Sciences, Rutgers University, Newark, NJ
jweis@newark.rutgers.edu

I have spent a career as a marine biologist and have published over 100 papers and two books on the topic of marine pollution.

In the past decade there has been an enormous amount of study and awareness of the problem of microplastics in the ocean, freshwaters, and estuaries. These are tiny pieces of plastic, generally less than 5 mm, with the vast majority of them being microscopic in size, the reason that people were unaware of them until recently.

The scientific literature is now teeming with papers documenting the density of these tiny plastic pieces in different bodies of water throughout the world, as well as in sediments, including deep seas as well as beaches. In a local limited pilot study, NY/NJ Baykeeper found that in the waters of NY/NJ Harbor, abundance averaged over a quarter of a million microplastic particles/km2 among all sites sampled. More than twice as many plastic particles were present in New York City Harbor waters than New Jersey Harbor waters, reflecting the greater population density. **They also reported that the most abundant type of plastic in all their samples was foam.**

There are also many papers documenting interactions between microplastics and animals such as plankton, fish larvae, and shellfish that eat by filtering the water ("filter-feeders") – most species studied have been found to swallow them. This has been seen in laboratory studies as well as in nature, where these particles have been found in the stomachs of collected organisms. These animals can be eaten by larger ones, and the plastics passed up the food chain to fish that we eat**. In the case of shellfish like clams and oysters, where we humans eat the whole animal rather than just the muscle, we are eating microplastics also.** Microplastics are also found in sea salt, ironically found in health food stores.

The potential health consequences of consuming microplastics are as yet unknown. Small plastic debris has been shown to cause physical damage leading to cell death, inflammation, and damage of tissues in the digestive tract of fishes. It is of particular concern that microplastics act as a "sponge" for various contaminants that might be in the environment such as PCBs, so that when animals eat the microplastics, they are ingesting concentrated levels of toxic chemicals along with the plastic; these may also be passed up the food chain. Some of these chemicals can transfer from the plastic debris to the fish. In turn, the consumption of marine animals that have consumed plastic debris may increase the concentration of hazardous chemicals in humans. Rochman and colleagues found that **fish that had been exposed to microparticles with chemical pollutants that had been taken up from the marine environment accumulated the pollutants and suffered liver damage**. Fish fed "clean" microplastics also showed signs of stress, but it was less severe than in fish that ate microplastics with absorbed pollutants. In another study they found that ingestion of microplastics at environmentally relevant concentrations, both with and without absorbed pollutants, altered endocrine system function in adult fish. Therefore, both the plastic material itself and the associated chemical pollutants are of concern for producing harmful effects.

Where do the microplastics come from? Initially attention was focused on plastic "microbeads" which were in cosmetic products such as facial scrubs. These products have now been banned in the United States by federal law passed over a year ago. Another source is tiny fibers shed from synthetic clothes when they are washed in washing machines. These fibers are shed into the water and go to sewage treatment plants, which remove a considerable amount, but billions of microfibers pass into the receiving water (e.g. Hudson River, East River, Jamaica Bay). A third major source of microplastics is the breaking up of larger pieces of plastic in the water. This includes plastic bottles, plastic bags, etc. that eventually become smaller and smaller pieces, eventually tiny microplastic pieces.

The longer a piece of plastic remains in the environment, the smaller the plastic litter will become, which is why small fragments of hard plastic and of styrofoam (EPS) are the predominant type of plastic found in beach cleanups. The type of plastic that breaks up the most rapidly is polystyrene foam; it is obvious to anyone that has handled styrofoam that it is the most fragile and breakable type of plastic so it becomes microplastics more rapidly. In a study of buried litter on beaches by Kusui and Noda, styrofoam was the predominant item accounting for 87% of all items. In stranded litter on the surface, hard plastics were the most common (72.9%), followed by Styrofoam (19.3%). Presumably, tiny pieces of Styrofoam on the surface are likely to blow away and re-contaminate the water.

In view of the fact that the NYC Department of Sanitation has investigated the possibility of recycling polystyrene and found it **not** to be environmentally effective or economically feasible, Bill 1480 should not be approved. The appropriate bill that the City Council should pass is one that would ban polystyrene foam altogether.

Int. No. 1480: In relation to designating expanded polystyrene as recyclable and repealing sections 16-324 (f) and 16-329 of the administrative code of the city of New York

Pactiv Foodservice/Food Packaging
May 12, 2017

Good afternoon, and thank you for the opportunity to testify here today on Intro 1480 which would add foam polystyrene to curbside recycling city wide.

My name is Dave Broocke, I'm the Director of Regulatory Affairs for Pactiv. Pactiv is one of the largest, and I'm proud to say best, food service packaging companies in the world. We manufacture all different types of packaging, not just polystyrene foam.

Pactiv has more than 50 manufacturing plants throughout the world, but our largest one is in upstate New York. Located in Canandaigua, right between Syracuse and Rochester, our plant has nearly 800 full time skilled and part time employees, making us the second largest employer in Ontario County.

In our part of the state, that's a lot of jobs ... critically needed jobs. Over the past two decades as the economy has grown better and more resilient here in New York City, our communities in upstate have seen an out migration of jobs - with our families and friends right behind them.

In 2013, Pactiv came here to testify about how the proposed ban on foam could drive jobs out of New York and move them overseas. And that the ban would be devastating blow to our employees, local suppliers and Pactiv's future in upstate.

It seems our voice was heard - and for that I want to say thank you. Thank you to the Council members, the staff and all those who took the time to learn the real facts – that polystyrene foam is safe, that it is cost effective and that it can be - and is - recycled.

In closing, I want to reiterate that moving from a ban to curbside recycling isn't just good for our business, it's good for your consumers, your constituents and their businesses.

Thank you for your time.

RAPAC
A RING COMPANY

May 12, 2017

New York City Council
Committee on Sanitation and Solid Waste
250 Broadway
New York, NY 10007

Re: Intro- 1480- Support

Dear Committee Members,

My name is David Wilson and I am the purchasing manager for RAPAC. If I may, I would like to share a little bit about myself, RAPAC and recycled Expandable Polystyrene and Polystyrene.

I have been an employee of RAPAC for 24 years. Part of my responsibilities as the Purchasing Manager for RAPAC are to oversee the purchase of recycled polystyrene and to help facilitate the use of the material at RAPAC. Most importantly, I have been tasked with the responsibility of growing the recycled markets and relationships with others in order to open up opportunities for RAPAC. I have served as a board member for the Alliance of Foam Packaging Recyclers, am a member of Association of Plastic Recyclers, and am currently a resource for the Expandable Polystyrene and Polystyrene industries to reach out to on how to recycle Expandable Polystyrene and Polystyrene.

RAPAC is located in Oakland Tennessee and manufactures Expandable Polystyrene materials and Recycled Polystyrene resins for many different markets. Some products that are easily recognizable are loosefill packaging, bean bag fill, drainage aggregate for water drainage systems and recycled food grade resins used to make food containers. Please look at the RAPAC website www.rapac.com to become more familiar with what we do. RAPAC has been in operation for 33 years and is currently forecasted to use approximately 32 million pounds of resin in 2017 to produce its products. Approximately 90% (28.8 mm lbs.) of the resin usage will be recycled polystyrene. Out of the 90% recycled polystyrene usage, approximately 14% (4.5 mm lbs.) will be post consumer.

The recyclability of Expandable Polystyrene and Polystyrene has been growing for many years. There are several reasons for this. Technology is a big part of this as well as learned knowledge of how to recycle these materials. RAPAC has been very fortunate over the years to have owners that have allowed the company to develop techniques, processes, and equipment that have been instrumental in aiding this growth area for the company. RAPAC has worked with many companies in these markets as well. Plastics Recycling Inc. is one of these companies. Plastics

RAPAC
A RING COMPANY

Recycling Inc has the ability to make a huge impact in the industry with their unique process. Their ability to take large quantities of post-consumer materials and recycle them into a very usable material on a consistence basis is a game changer in the industry. The simple fact that post-consumer Expandable Polystyrene and Polystyrene materials can be cleaned up enough to be used by many and not just some people makes this a very viable program. RAPAC is eager to be a part of this program and has the ability to use large quantities of these post-consumer materials.

In closing, products made from Expandable Polystyrene and Polystyrene are easily recyclable. Converting materials that are slated for the landfill back into a usable resin and then back into a usable good/product defines the word recyclable. To see legislation put in place that does not include the recycling of Expandable Polystyrene and Polystyrene would be a huge mistake. In fact, I think it would almost be viewed as ban on the recyclability of the product and that is simply not true. To see legislation put in place to help promote the recycling of Expandable Polystyrene and Polystyrene would be the right thing to do and is a win for all parties involved.
I respectfully ask the council to set the standard for others to follow and approve Expandable Polystyrene and Polystyrene in their recycling program.

Thank you,

David Wilson
Purchasing Manager
RAPAC, LP

65 Industrial Park Rd, Oakland, TN 38060 P.901.466.7506

Int. No. 1480: In relation to designating expanded polystyrene as recyclable and repealing sections 16-324 (f) and 16-329 of the administrative code of the city of New York

Pactiv Foodservice/Food Packaging
May 12, 2017

Good afternoon, and thank you for the opportunity to testify here today on Intro 1480 which would add foam polystyrene to curbside recycling city wide.

My name is Dave Broocke, I'm the Director of Regulatory Affairs for Pactiv. Pactiv is one of the largest, and I'm proud to say best, food service packaging companies in the world. We manufacture all different types of packaging, not just polystyrene foam.

Pactiv has more than 50 manufacturing plants throughout the world, but our largest one is in upstate New York. Located in Canandaigua, right between Syracuse and Rochester, our plant has nearly 800 full time skilled and part time employees, making us the second largest employer in Ontario County.

In our part of the state, that's a lot of jobs ... critically needed jobs. Over the past two decades as the economy has grown better and more resilient here in New York City, our communities in upstate have seen an out migration of jobs - with our families and friends right behind them.

In 2013, Pactiv came here to testify about how the proposed ban on foam could drive jobs out of New York and move them overseas. And that the ban would be devastating blow to our employees, local suppliers and Pactiv's future in upstate.

It seems our voice was heard - and for that I want to say thank you. Thank you to the Council members, the staff and all those who took the time to learn the real facts – that polystyrene foam is safe, that it is cost effective and that it can be - and is - recycled.

In closing, I want to reiterate that moving from a ban to curbside recycling isn't just good for our business, it's good for your consumers, your constituents and their businesses.

Thank you for your time.

PRINCETON MOULDING GROUP LLC

76 FOURTH STREET
SOMERVILLE, NEW JERSEY 08876

May 12, 2017

Good Afternoon. My name is Gary Frederick, President of Princeton Moulding Group. I'm here today to testify in support of Intro 1480, the addition of EPS to the citywide curbside recycling program.

First, I want to thank the Members of the City Council Sanitation Committee for holding this important hearing.

My company is located in Central New Jersey, just a mere 40 miles south of NYC. We are a manufacturer of high quality EPS mouldings for the furniture, picture frame and architectural markets. Our mouldings contain approximately 98% recycled EPS. We began manufacturing these products in 2006, and despite some of what I have heard here today, EPS is highly recyclable. The issue for me isn't: can we recycle EPS ?, because we do that every day. The issue is; can we get enough of it to grow our industry?

Ten years ago, when we started manufacturing Moulding, we actually had to import recycled EPS from Korea. Over time, the recycled EPS markets have improved, but we still need more here in the United States

I am here today to express my strong support for Intro 1480. Recycling EPS will help grow jobs and is an investment in our economy. We commend the sponsors for this thoughtful and progressive legislation and urge the City Council to pass it into law.

Thank you for the opportunity to speak to you today and I'm happy to take any questions.

Gary M. Frederick

President
Princeton Moulding Group LLC

TESTIMONY OF RICHARD MASTER, CEO, MCS INDUSTRIES, INC
MAY 12, 2017

Good afternoon, I'm Richard Master, CEO of MCS Industries, we are headquartered not too far from here in Easton, PA. I'm here to express our strong support for Intro 1480, legislation that would add foam to the city-wide curbside recycling program.

MCS Industries is the largest supplier of picture frames and decorative mirrors in the US. Historically, picture frames have been made from wood and metal. The industry has in the last two decades moved increasingly toward plastic resin as its primary material source.

MCS is a vertically integrated manufacturer and we produce most of our products from recycled plastic resins. Recycled EPS is the primary material source.

Polystyrene is 100% recyclable and is already recycled commercially in big cities and small cities across the nation and communities around the globe.

In fact, we used over 9 million lbs. of recycled resin last year and require seven million pounds of recycled EPS.

Anyone who suggests that polystyrene foam cannot be recycled is just ignoring reality - I wouldn't have a company, I wouldn't be sitting here and the 900 people who we employ wouldn't have jobs if we couldn't.

As I mentioned, our company takes EPS scrap and makes it into picture frames, mirrors and clocks and various other home décor items.

I brought with me a few samples of our products - they are real - which you can buy at Walmart, Target, Michael's, Home Depot, and Lowe's stores and many other retailers.

Currently, MCS sources condensed EPS scrap from dealers throughout the US and the fact is we need more material not less. Over the years the markets have continued to expand as more communities add ESP to curbside recycling. We understand that a recycling operation has been established in New York City to recycle the curbside EPS scrap to clean and densify it. We would be interested in being a customer of that company and using that material.

The proposed legislation would add more ESP scrap to the recycling market place which is a plus to our business and the hundreds and hundreds of employees that call MCS home. We commend the sponsors for this thoughtful and progressive legislation and urge the City Council to pass it into law.

Thank you for the opportunity today and I'm happy to take any questions.

AZURE
Technologies, Inc.

May 12, 2017

New York City Council
Committee on Sanitation & Solid Waste Management
250 Broadway
New York, NY 10007

RE: Intro-1480

Dear Honorable Committee Members

Azure Technologies Inc., is an engineering consulting firm providing system design, engineering, process development and turnkey systems implementation services for the plastics recycling industry.

Our services include the design, fabrication and installation of containers sorting processes, grinding and washing systems and end-product system implementation.

Our hands-on expertise we have acquired over 30 years of working on turnkey plants, process development and system upgrades projects, ensures our clients receive the highest quality and most dependable systems.

Azure Technologies has been contracted by Plastics Recycling Inc., and Dart Container Corporation to provide technical assistance with the design and implementation of a State of the Art recycling system for post consumer Foam and Rigid Polystyrene.

The facility is located in Indianapolis, IN.

System Design Overview

The design of the system is based on incorporating the latest technologies with a proven record of performance, reliability and flexibility to adapt to different material specifications from a variety of sources.

6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

The key components in the system, that address the historical challenges of recycling Foam and Rigid Polystyrene are described in detail and consists of:

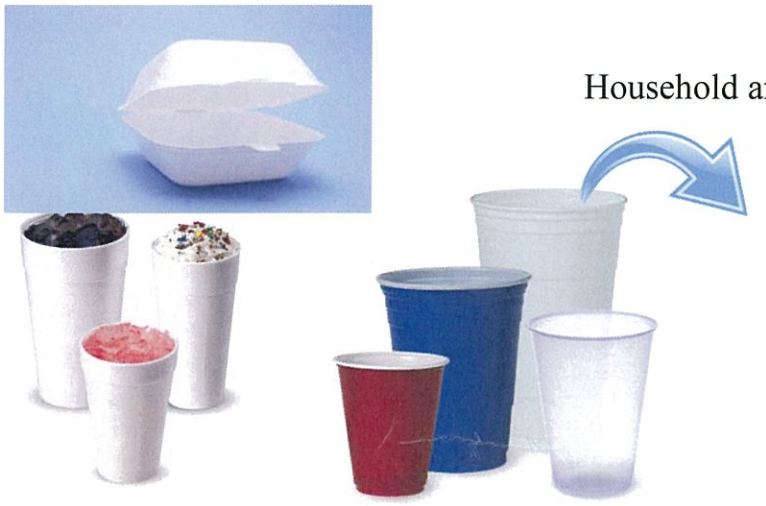
- Herbold Plastics Granulator
- Pellenc Optical Sorter
- Attrition Washers
- Float/Sink Tank
- Herbold Aglomerator
- Twin Screw Extruder with Dewatering Section
- Continuous Melt Filtration

6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

AZURE Technologies, Inc.

Process Description

Incoming Material



Household and commercial PS products

Typical Material Recycling Facility (MRF) bale of commingled foam and rigid Polystyrene.

High density bale= ~1200 lbs
Truck Load =~ 38,000 lbs

End Product

Polystyrene Pellets used as a feedstock for PRI products.

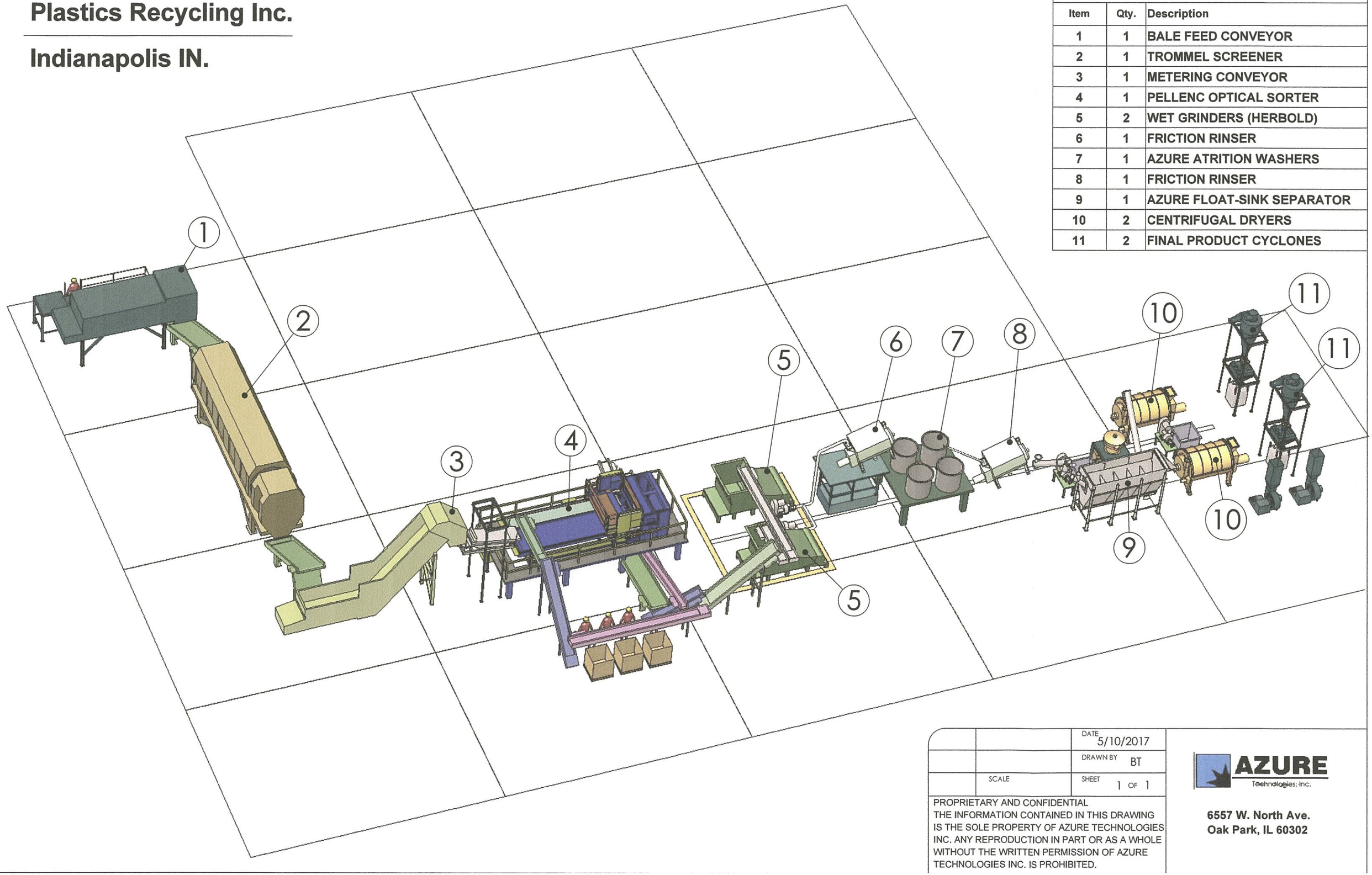
Polystyrene is also compounded according to required specifications by third party processors.

6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

Plastics Recycling Inc.

Indianapolis IN.

EQUIPMENT LEGEND		
Item	Qty.	Description
1	1	BALE FEED CONVEYOR
2	1	TROMMEL SCREENER
3	1	METERING CONVEYOR
4	1	PELLENC OPTICAL SORTER
5	2	WET GRINDERS (HERBOLD)
6	1	FRICTION RINSER
7	1	AZURE ATRITION WASHERS
8	1	FRICTION RINSER
9	1	AZURE FLOAT-SINK SEPARATOR
10	2	CENTRIFUGAL DRYERS
11	2	FINAL PRODUCT CYCLONES



		DATE 5/10/2017
		DRAWN BY BT
	SCALE	SHEET 1 OF 1

AZURE Technologies, Inc.

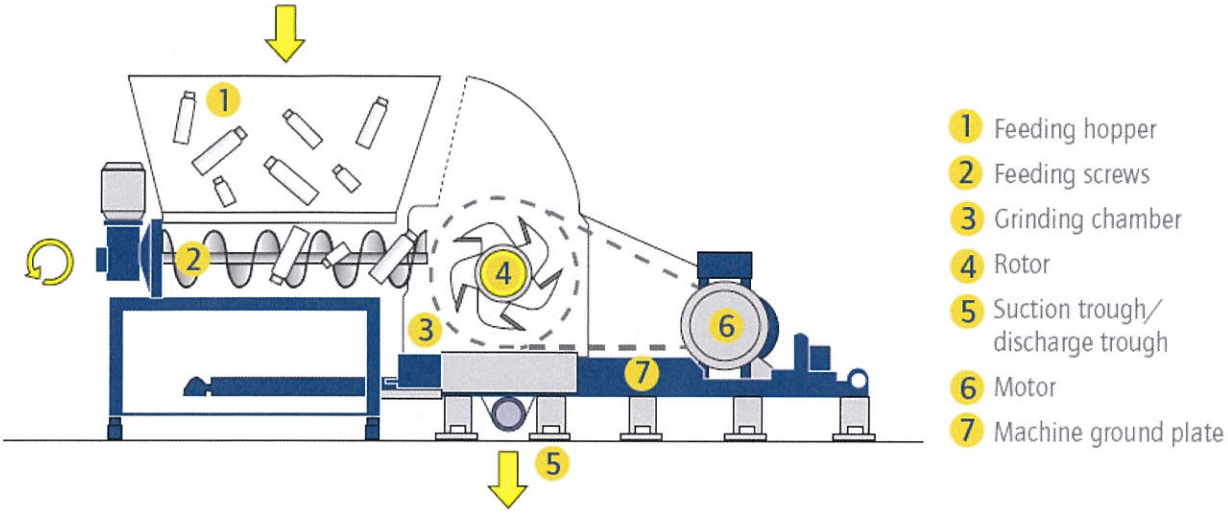
6557 W. North Ave.
Oak Park, IL 60302

AZURE
Technologies, Inc.

Herbold Wet Granulators

The newest generation of plastics granulators from Herbold is specially designed to handle low density, bulky materials.

In front of the cutting chamber there is a receiving hopper fitted with three feeding screws to force the light, bulky material into the granulator.

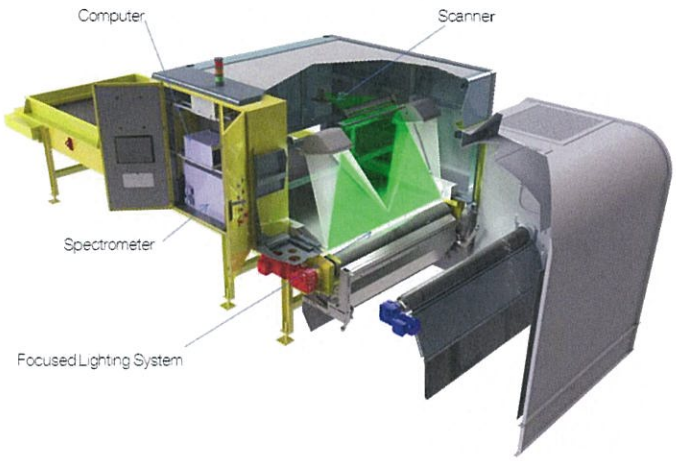


The granulation process is enhanced by introducing water into the cutting chamber.
Wet grinding reduces material loses and assists the washing process by removing all loose contaminants from the infeed material.

6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

AZURE Technologies, Inc.

Pellenc Optical Sorter and resort loop



The optical sorter uses near infrared (NIR), vision & induction technologies to separate particles as small as 30 mm in size.

The unit installed is the latest generation of the optical sorter and was first introduced in 2001. There are currently more than 1,000 machines installed worldwide.

The optical sorter is currently configured in our system to positively sort PS foam and rigid, and has a re-sort channel to increase yield output.

The touch-screen human interface allows the operator to easily reconfigure the sorting functions to adapt to any input material changes.

The sorter removes other plastics, metals, and contaminants from the feed stream.

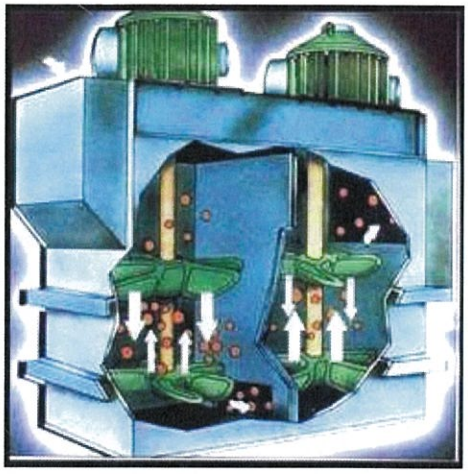
6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

AZURE Technologies, Inc.

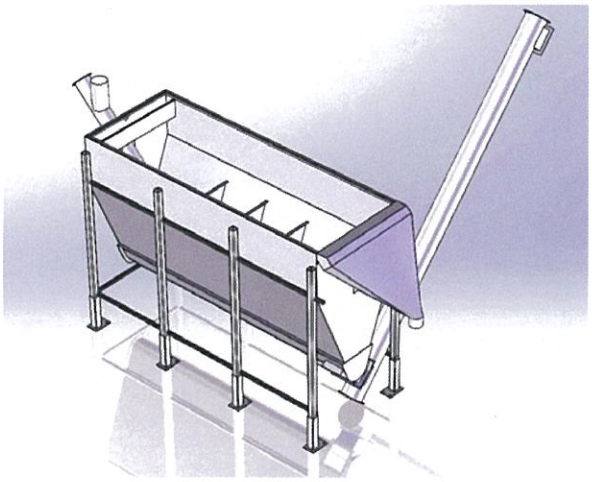
Attrition Washer

The Attrition Washer is a plastics washer that consists of two Hi-Flow Impellers working against each other to create a high friction zone of flake-on-flake scrubbing action.

The washer combines high friction and long washing retention time to remove all contaminants attached to the PS flake.



Float/Sink Tank



The Float-Sink tank uses the density of water to separate Foam from Solid PS.

Foam floats due to its low bulk density, while solid PS sinks.

The tank large volume capacity is designed to efficiently handle the large volume of the polystyrene foam.

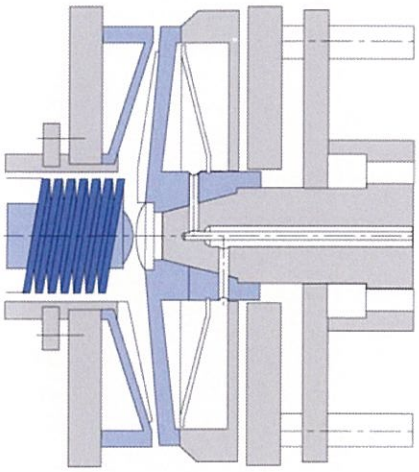
Each fraction is routed to separate centrifugal dryers.

6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

AZURE Technologies, Inc.

Plastics Agglomerator

The purpose of the agglomerator is to increase the density of materials with very low density which are, in general, very difficult to transport, store and process.



The agglomerator uses friction between co-rotating discs to densify PS foam.

It reduces material volume and increases bulk density by a factor of 10.

Fully automated, the agglomerator continuous operation requires minimum operator input.

Detail of the compacting zone with rotor and stator disc.

View of the installation at the facility.

Difficult to handle clean foam material is converted to a high density granulate to improve storage and throughput in the extruder.

6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

AZURE Technologies, Inc.

Twin Extruder with Dewatering Section

Using co-rotating twin screw extrusion technology, Krauss Maffei Berstorff extruder allows high levels of moisture removal.

Up to 50% moisture removal is possible. This technology eliminates the need for extensive pre-drying and simplifies the recycling process of washed foam and rigid PS.

Ettlinger Melt Filtration

In addition to all the advanced technologies for sorting and washing contaminants, the pelletizing step is fitted with the most advanced melt filter in the market.

Traditional melt filters can not remove more than 0.1% contamination

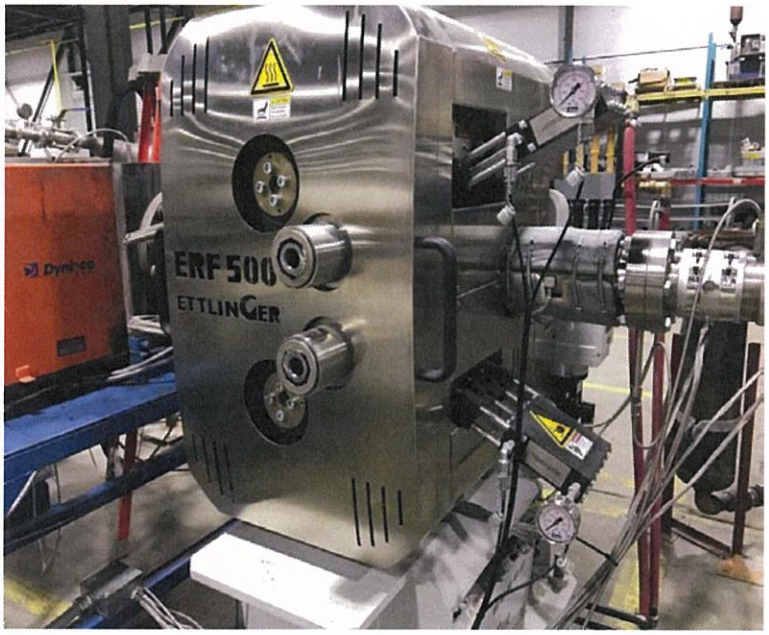
6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

AZURE
Technologies, Inc.

Ettlinger's innovative continuous melt filter, introduced in 2014, is designed to filter polymer feedstock with almost any contaminant content.

It can remove up to 5% contamination, such as labels, adhesives and aluminum with minimal resin loss and without process interruptions.

The filter produces a high quality resin.



Conclusion

The innovative design of the system, based on new, proven technology from industry leaders, provides a reliable system to handle historical challenges of recycling foam and rigid Polystyrene and produces a high-quality resin for product manufacturers in need of feedstock from sustainable sources.

Thank you,

Sergio Firpo

President
Azure Technologies, Inc.

6557 W. North Ave. Oak Park IL 60302 Tel: 708-386-2115 Fax: 708-386-6123
info@azure-tech.net

FOR THE RECORD

My name is John Oppermann and I serve as Executive Director of Earth Day Initiative. We're a non-profit based right here in the city dedicated to environmental awareness and engaging the public around real and substantive sustainability solutions. We've worked with hundreds of organizations over the past several decades.

Because Earth Day arose at a time when we faced great environmental challenges, we are particularly aware of the dire situation we find ourselves in now and the heightened level of engagement amongst a broad swath of New Yorkers and people around the world.

This isn't a time to let things slide. This is a time to be bold in our local communities when we cannot rely on our national leaders to do what is in the best interest of our country and our communities.

This is also a time when we have to stand up for facts and stand up for science. In the age of alternative facts and a war on science, we cannot allow policy based on bad science to creep into our city policies.

This past Earth Day, we saw people stand up for science-based and well reasoned policy. Hundreds of thousands of people came out to say that we need to stand up for reason and stand up for what is right.

Creating policy that experts simply don't agree with is short sighted and self-interested in the worst way. Sadly that's what this bill is. And we deserve better.

The New York City Council and Department of Sanitation have in many ways done a fantastic job of tackling our waste challenges and have set ambitious goals for dealing with our waste challenges going forward. Community organizations and industry need to work with DSNY to find the best solutions that make sense and are based on reasoned analysis. The experts in this arena all agree that this designation of polystyrene foam as recyclable makes no sense. We should listen to them. Passing a bill that helps no one and actually slows down efforts at real progress are not in the interest of this city and your constituents.

FOR THE RECORD FOR THE RECORD FOR THE RECORD

Public Hearing of the Committee on Sanitation and Solid Waste Management
of the NYC City Council, May 12, 2017
Testimony of Marilyn Stern, United for Action volunteer

Thank you for the opportunity to testify at today's hearing. My name is Marilyn Stern, and I'm a volunteer with United for Action. I strongly oppose bill 1480. While I'm a strong advocate of recycling, this bill does not propose any actual recycling. It proposes only a designation, with no solution or implementation even suggested. It is obvious that this bill is merely a prophylactic against an EPS ban.

Let's look at the timing: As you know, Local Law 152 banning polystyrene was passed by the City Council in December 2013. A lawsuit ensued, resulting in an order for Department of Sanitation Commissioner, Kathryn Garcia, to rewrite her finding that polystyrene foam could not be recycled in an economically and environmentally feasible way. Her disposition, which must prove that her finding is not "arbitrary and capricious" as the lawsuit claimed, is forthcoming. It is due to the court on July 29[1]. The timing of bill 1480 is set to cut off any consideration of the Commissioner's clarified finding.

It is the stated opinion of the Chair of this committee, Antonio Reynoso, that EPS cannot be feasibly recycled. He said on January 8, 2015, "I support the Administration's determination that polystyrene foam cannot be recycled, and look forward to working with the City to do aggressive outreach to businesses and non-profits about this new law." [2]

In the two-plus years since, nothing has changed. No facility has been built nor expanded to recycle polystyrene in New York City. Nor has a market for recycled EPS waste arisen.

Furthermore, it is wrong to assume that the restaurant sector opposes an EPS ban. In 2015 Chris Hickey, Regional Director NYC of the New York State Restaurant Association stated, "The New York State Restaurant Association appreciates the efforts of the NYC Department of Sanitation and the Mayor's Office to enact legislation that moves our industry toward sustainability while recognizing the needs of small businesses... We look forward to working with the City to educate restaurants on how to comply with the law and helping them find alternative products that are better for the environment and cost effective."[3]

So who is this bill really serving? Since 2013, the Dart Container Corporation has reportedly spent $837,000 lobbying the City Council.[4] In addition, Dart CEO's wife Ariane Dart gave direct contributions to Council members, including the lead sponsor of this bill Fernando Cabrera, as reported by the Huffington Post[5]. I ask the council members who accepted this money: Who do you really represent on this Council? And how do you sleep at night?

As for the Dart Corporation and other makers of polystyrene, I strongly suggest that your money would be better spent on R&D into truly recyclable — or better: compostable — packaging and containers. Because that is what our city and our planet truly need. Please, I urge the council members to use common sense. The public will not be fooled by this flagrantly ridiculous corporate-sponsored bill, and neither should you be. Thank you.

---

[1] http://www.huffingtonpost.com/entry/590a8dbde4b05279d4edc2b3

[2] http://www1.nyc.gov/office-of-the-mayor/news/016-15/de-blasio-administration-bans-single-use-styrofoam-products-new-york-city-beginning-july-1-2015

[3] Ibid.

[4] http://nypost.com/2017/05/07/new-recycling-bill-could-play-a-major-role-in-styrofoams-fate/

[5] http://www.huffingtonpost.com/entry/590a8dbde4b05279d4edc2b3

FOR THE RECORD COMMODORE

26 Maple Avenue Bloomfield, NY 14469 p 585.657.7777 f 585.657.6400

Date: May 12, 2017
Subject: NYC Intro 1480

Good afternoon, my name is George Braddon and I am from Commodore.

I want to thank the members of the Sanitation Committee for holding this hearing and providing an opportunity for small businesses like ours that produce foam products to speak about this important legislation.

In business since 1983, our company employs over 200 people. Our facility is located about 100 miles north in Bloomfield, New York (Ontario County) - where we are one of the area's largest employers. Our primary products are the foam meat trays you see in supermarkets like D"Agostino, Fairway or C-Town.

There has been a lot of conversation at this hearing and in the press about what this bill means to Dart, the leader in our industry, I'm here to talk about why it's important to Commodore Solutions and our 200 employees.

There are a lot of misconceptions and some outright falsehoods about polystyrene packaging and these are the basis of efforts to ban foam. A ban on foam would devastate our business.

Polystyrene packaging is safe. We make packaging for many different food products.

For more than fifty years the FDA has determined that polystyrene is safe for use in food products. Our products are held to the highest standards - we adhere to the highest BRC packaging standards. The BRC Global Standard for Packaging and Packaging Materials is the first Packaging Standard in the world to be recognized by the Global Food Safety Initiative (GSFI).

166A 22nd Street
Brooklyn, NY 11232 | NYC-EJA.org

On the ground – and at the table.

New York City Environmental Justice Alliance testimony to the New York City Council Committee on Sanitation and Solid Waste Management, Regarding Int. No. 1480

May 12th, 2017

Good afternoon. My name is Priya Mulgaonkar, and I am here to testify on behalf of the New York City Environmental Justice Alliance (NYC-EJA). Founded in 1991, NYC-EJA is a non-profit citywide membership network linking grassroots organizations from low-income neighborhoods and communities of color in their struggle for environmental justice. NYC-EJA empowers its member organizations to advocate for improved environmental conditions and against inequitable environmental burdens. NYC-EJA has been a leader in advocating for a more equitable and sustainable solid waste system for over 20 years. NYC-EJA led efforts for comprehensive policy reforms to address solid waste and the impacts of dozens of transfer stations on a handful of low-income communities of color throughout New York City – which culminated in the landmark 2006 Solid Waste Management Plan.

New York City creates roughly 35,000 tons of garbage every day. Garbage trucks needlessly travel thousands of miles throughout New York City polluting our air with diesel fuel, clogging our streets, and diminishing our quality of life. These impacts are greatest in those few low-income and communities of color where truck-dependent transfer stations are clustered, and along the truck routes used to haul garbage. Not surprisingly, these same communities deal with many sources of pollution and the negative health consequences thereof – such as asthma, heart disease, and cancer. Because a number of NYC-EJA's member organizations and allies come from communities overburdened by garbage – specifically North Brooklyn, the South Bronx, and SE Queens – we advocate for strong policies that minimize the impact of truck traffic and trash in our neighborhoods – including restricting harmful materials that inevitably end up polluting our communities on their way to landfills or incinerators, where they continue to degrade our environment.

While we do support strong policies that lead to waste diversion, we are skeptical of false solutions that preclude meaningful reductions in plastic pollution. It is not practical to recycle polystyrene foam – also known as Styrofoam. Unlike recyclables like cardboard, there is no market for dirty foam food and beverage containers. There is no precedent for recycling Styrofoam in any major city in America. In contrast, a ban on Styrofoam containers has proven successful in over 100 communities around the nation, including San Francisco and Washington D.C. We have inexpensive, recyclable alternatives to polystyrene foam, including paper, plastic and compostable materials.

Rather than impede progress on the City's Zero Waste goals, the council should focus on legislation that bans harmful, unnecessary plastics from our environment, and reduces the amount of noxious materials in our waste stream. Low-income communities and communities of color in this city deserve cleaner air and safer streets. Only a restriction on this polluting plastic foam will truly bring our City closer to a fair, zero-waste system. We strongly oppose the passage of this legislation.

Thank you for the opportunity to testify.

The North Shore Waterfront Conservancy of Staten Island, Inc.
P.O. Box 140502
Staten Island, New York 10314

May 11, 2017

Reference: Opposition to Polystyrene Recycling Bill. Intro 1480.

My name is Beryl Thurman, I am the Executive Director and President of the North Shore Waterfront Conservancy of Staten Island. I live and work in the environmental justice communities on the North Shore. Staten Island is also the home of what was once the largest landfill in the world until its closing in 2001. Fresh Kills is located on the West Shore of Staten Island and it is 2,200 acres of non- recycled garbage generated by all 5 boroughs of the City of New York.

One of NSWC's goals is to gain safe waterfront access for Staten Island's North Shore Environmental Justice communities. But to do that we had to bring attention to the industrial waterfront, so we organized waterfront clean ups at City owned abandoned properties. And that is where we saw pebbled and sand beaches covered with various types of plastics, all in various colors, sizes, and sometimes these pieces hadn't completely broken a part so you could tell what they use to be.

So, there we were with about 75 or so volunteers cutting back over growth, pulling out illegally dumped tires, household appliances, discarded toilet bowls and at the beach area there would be a group of people some had assigned themselves the task of picking up cigarette butts because they are nonbiodegradable and others were picking up plastics including polystyrene cups and food containers. People loved these cleanups because it made them feel that they were making a difference, that they were doing their part in helping our island and the environment.

But I looked at these clean ups as cupcake projects because within a day or two that beach would look as if we never touched it. The tides and the wakes from the boats would bring in a whole new batch of plastics and of course polystyrene. It occurred to me that in order for these cleanups not be acts of futility, we would have to be more responsible in what types of plastics we use, and how we dispose of them. As well as using more materials that are naturally biodegradable.

Since Fresh Kills' closing and it being turned into a NYC Park it is no longer the largest landfill in the world, my understanding is, now our oceans are the largest landfills in the world. Apparently, we have learned nothing thereby making us the smartest dumbest species ever.
https://en.wikipedia.org/wiki/Fresh_Kills_Landfill

Margot R. Becker
689 Columbus Avenue, 2H New York, NY 10025
(917) 715-2697 MargotRBecker@hotmail.com

May 11, 2017

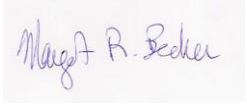
To the New York City Council Committee on Sanitation and Solid Waste Management:

As a born and bred New Yorker and member of my building green team, my synagogue green team, and several other green councils, I am strongly opposed to the idea that polystyrene foam is a recyclable material, and thus I am strongly opposed to Intro 1480. Polystyrene is NOT a recyclable material. Rather, this is a myth advanced by the polystyrene and chemical industries to continue to sell their products.

- Polystyrene is a human health risk, especially when it comes in contact with hot foods and liquids. Many scientific studies show that styrene molecules move from the packing materials, plates and cups and into the foods and drinks, and are then ingested. Plastic in our food and drink? No thank you!
- Styrene has long been linked to potential health problems in workers in polystyrene manufacturing plants. These people are simply trying to make a living and should not be subjected to toxic chemicals.
- For New York City's polystyrene to be recycled successful, there must be a reliable polystyrene recycling business to which we can send it. This does not exist. Even if we could collect our city's polystyrene, there would be no recycling facility to which to send it.
- Polystyrene costs twice as much as other plastics to clean and prepare for recycling, and then after all that work and expense, there is no market for it. Thus polystyrene recycling does not make economic sense and polystyrene recycling businesses will fail every time. Over 100 companies and cities have attempted to establish a polystyrene recycling operation, and none have been successful.
- When polystyrene makes it to existing recycling operations, it mucks up those systems because it breaks apart very easily and gets mixed in with other materials, contaminating them and reducing their value for resale. When polystyrene gets into recycling facilities, these facilities must comply with costly OSHA measures related to ventilation to prevent inhalation by staff members. These facilities call polystyrene what it really is—garbage—and they send it to landfill.
- Because polystyrene can not be successfully recycled, it is landfilled. As New York moves forward on a zero waste plan, it would be stupid to introduce a large source of unrecyclable garbage into our waste.
- Some of New York City's polystyrene waste is burned in Essex County, NJ, upwind of Harlem and the Upper West Side. This is dangerous for our neighbors' health, and our own. I live on the Upper West Side, so I inhale this material when it is burned. Oh no!
- When polystyrene litters our parks and streets, it is unsightly; when it litters our waterways, it can harm sea animals that mistake the tiny particles for food, thus ingesting it (and then we ingest them!)
- Many good alternatives to polystyrene food and beverage containers exist, including paper and compostable products. The cost of these is reducing and is now coming close to the cost of polystyrene products. Banning polystyrene cups and clamshells in restaurants will help educate people and move them toward using other materials at home.

Let's not collect this lousy material! Let's reduce its use in our beautiful city! Over 100 cities across the country, including San Francisco and Washington DC, have banned polystyrene food container. Let's follow their lead. For the sake of human health, the environment, and the economic health of our city and region, it is very important that Intro 1480 IS NOT PASSED. Instead, a positive proposal is Intro 1596, which would ban polystyrene from food service in NYC, and which I strongly support.

Thank you,



THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Roberto Orlin - D/C Legal Affairs DSNY

Address: 125 Worth St - Rm 716 - NY, NY 10013

I represent: DSNY

Address: 125 Worth St - 7th Flr - NY, NY 10013

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Jeremy Cherson

Address: 20 Secor Rd Ossining, NY

I represent: Riverkeeper

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: _____

(PLEASE PRINT)

Name: Akila R Simon

Address: _____

I represent: Guardians of Flushing Bay

Address: Queens NY.

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Melissa Jachan

Address: 151 W. 30th St. 11 flr

I represent: NYLPI

Address: See above

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 12 May 2017

(PLEASE PRINT)

Name: Christopher Chin

Address: _____

I represent: The Center for Oceanic Awareness Research and Education

Address: 4123 Broadway #909, Oakland CA 94611

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: May 12, 2017

(PLEASE PRINT)

Name: Dr. George Cruzan

Address: 1153 Roadstown Rd, Bridgeton, NJ

I represent: Acc SFPG

Address: Washington, DC

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Jennie Romer

Address: 73 Irving Ave #3L

I represent: citizen

Address: n/a

No need to testify

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☑ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Noemi de la Puente

Address: 122 Carter Rd. Princeton, NJ 08540

I represent: NJ Environmental Lobby

Address: 4 West State St. Trenton, NJ 08625

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Sandra Meola

Address: 52 W Front St Keyport NJ 07735

I represent: NY/NJ Baykeeper

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: [illegible]

Address: [illegible]

I represent: [illegible] (Restaurant)

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: [illegible]

Address: _____

I represent: Vibes Restaurant

Address: 1623 White Plains RD

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: RHONDA KEYSER Debby Lee Cohen

Address: 210 Cambridge Pl. #2 Brooklyn

I represent: Cafeteria Culture

Address: 310 E. 12th St NY NY

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: RHONDA KEYSER Debby Lee Cohen

Address: 210 Carroll St. #2 Brooklyn

I represent: Cafeteria Culture

Address: 310 E. 12th St NY NY

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: March 12, 2017

(PLEASE PRINT)

Name: Darren Suarez

Address: 111 Washington Ave, Albany NY 12211

I represent: The Business Council of New York State

Address: 111 Washington Ave, Albany NY 12211

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Alessandro Ciari

Address: 80 Lorainne St. Brooklyn, NY 11231

I represent: Natural Resource Protection Agency

Address: PO Box 050328 Staten Island, NY 10305

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 5-12-17

(PLEASE PRINT)

Name: Akesha Freeman

Address: Bklyn, NY

I represent: Sugar Hill Restaurant & Supper Club

Address: 615 DeKalb Ave, Bklyn, NY 11221

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☑ in favor ☐ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: DIANE SANDERS

Address: 423 HEGEMAN AVENUE - BKLYN. NY 11207

I represent: BLACK JEWEL CATERING

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Manuel Cuban

Address: 55 East 102

I represent: Smashers

Address: 153 East 103 street

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Rev. Ismael Apolicano

Address: 343 Pennyfield Ave Bronx, NY 10465

I represent: Johnny Rivera

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Uma Fulsaran

Address: 343 Pennyfield Ave Bronx, NY 10457

I represent: _____

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: AKISHA Freeman

Address: _____

I represent: Manager Sugar Hill Restaurant

Address: Brooklyn, NY

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Kathryn Garcia - DSNY Comm.

Address: 125 Worth St - 7th Flr - NY, NY 10013

I represent: DSNY

Address: 125 Worth St - 7th Flr - NY, NY 10013

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: _____

Address: _____

I represent: _____

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☑ in opposition

Date: _____

(PLEASE PRINT)

Name: THOMAS GORMAN REILLY

Address: 1457 LEXINGTON AVENUE

I represent: CIVITAS

Address: 1457 LEXINGTON AVENUE NYC 10128

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: William L. Goodfellow

Address: 420 Lexington Ave, Suite 1740 New York, NY 10170

I represent: Exponent

Address: Same

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: _____

(PLEASE PRINT)

Name: Brendan Sexton

Address: 134 Sullivan

I represent: ME

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: _____

(PLEASE PRINT)

Name: Ron Gonen

Address: 227 Central Park West #6A

I represent: Closed Loop Partners

Address: 817 Broadway 5th floor

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: 5/12/2017

(PLEASE PRINT)

Name: MYLAN DENERSTEIN OF GIBSON DUNN LLP

Address: 200 PARK AVE

I represent: DART CONTAINER CORP. / PLASTIC RECYCLING INC.

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: _____

(PLEASE PRINT)

Name: ERIC GOLDSTEIN

Address: _____

I represent: NATURAL RESOURCES DEFENSE COUNCIL

Address: 40 W 20 ST.

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: COLIN BEAVAN

Address: _____

I represent: NO IMPACT PROJECT

Address: 269 Empire Blvd, Brooklyn 11225

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 / 180 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: MIKE LEVY

Address: 700 2nd St, NE, Washington, D.C. 20002

I represent: American Chemistry Council Plastics Foodservice Packaging Group

Address: Washington, DC

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Fred DeFazio - Kevin Haggerty

Address: 166 Main St Lincoln Park, NJ

I represent: Genpak

Address: Middletown, NY

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: May 12, 2017

(PLEASE PRINT)

Name: WALTER REITER

Address: 1298 CRONSON BLVD. SUITE 201 CROFTON MD

I represent: EPS INDUSTRY ALLIANCE

Address: CROFTON, MARYLAND

Please complete this card and return to the Sergeant-at-Arms

3

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: 5/12/2017

(PLEASE PRINT)

Name: David Wilson

Address: 110 Estate Drive, Eads, TN 38028

I represent: _____

Address: datawil@bellsouth.net

---

* Religious custom *

** Must leave by sundown **

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Moishe Grossman

Address: 1458 42nd St Brooklyn, NY

I represent: Dart Container Sales Co.

Address: _____

3

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: 5-12-2017

(PLEASE PRINT)

Name: DAVID BROOKE

Address: PACTIV, LAKE FOREST, IL

I represent: PACTIV

Address: SAME

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: REV. DR. [illegible]

Address: PO BOX 170606 BKLYN NY 11217

I represent: JOPPA CHRISTIAN MINISTRIES

Address: SAME - ABOVE

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: 5/12/2017

(PLEASE PRINT)

Name: Clark Peña

Address: 444 E 118 St

I represent: NYC Hispanic Chamber of Commerce

Address: 210 E 116 St NYC

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Ling Tsou

Address: New York City

I represent: United for Action

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: DIANE SANDERS

Address: 423 HEGEMAN AVENUE, BKLYN. NY. 11207

I represent: BLACK JEWEL CATERING

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Priya Mulgaonkar

Address: 166A 22nd St Brooklyn 11232

I represent: NYC Environmental Justice alliance

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: ISAAC Jordan

Address: 936 ST. MARKS Ave.

I represent: Sustainable Crown Height. Crown Heights

Address: _____

Please complete this card and return to the Sergeant-at-Arms

3

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Gary Frederick

Address: 76 4th Street, Somerville, NJ.

I represent: Princeton Moulding Corp.

Address: Same

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Ronald Armstrong

Address: 275 Clinton Ave Bklyn, N.Y. 11205

I represent: _____

Address: _____

2

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: May 12, 2017

(PLEASE PRINT)

Name: Nathan Dempsey

Address: Falls Church VA

I represent: Foodservice Packaging Institute

Address: Falls Church VA

Please complete this card and return to the Sergeant-at-Arms

2

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Richard Master CEO MCS INDUSTRIES

Address: 2280 New LINS MILL RD EASTON Pa

I represent: MCS Industries

Address: _____

(2)

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: SERGIO FIRPO

Address: OAK PARK, IL

I represent: AZURE Technologies

Address: OAK PARK, IL

2

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: PATH MOORE

Address: PO BOX 1327 SONOMA CA 95476

I represent: SUSTAINABLE MATERIALS MNGMT

Address: PO BOX 1327 SONOMA CA 95476

Please complete this card and return to the Sergeant-at-Arms

(1)

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: 05/12/17

(PLEASE PRINT)

Name: Michael Westerfield

Address: 130 S. Maple St Corona, CA 92880

I represent: DART

Address: 500 Hogsback Rd. Mason, MS 48854

(1)

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: ROBIN CANTOR

Address: _____

I represent: BERKELEY RESEARCH GROUP

Address: WASHINGTON, D.C.

(1)

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: WILLIAM GOODFELLOW

Address: _____

I represent: EXPONENT, INC.

Address: 1800 DIAGONAL ROAD, SUITE 500, ALEXANDRIA VA 22314

Please complete this card and return to the Sergeant-at-Arms

(1)

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: ALAN R SHAW

Address: 2015 S. Pennsylvania ST Indpls IN 46225

I represent: Plastic Recycling Inc

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/2017

(PLEASE PRINT)

Name: Kelly Lester

Address: 349 E. 10th Street, NY 10009

I represent: NYU Environmental Law Clinic

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☑ in opposition

Date: _____

(PLEASE PRINT)

Name: Judith S. Weis

Address: 170 West End ave 12N NY NY

I represent: Trash-Free Waters Partnership

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Genesis Abreu

Address: _____

I represent: WE ACT for Environmental Justice

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: May 12, 2017

(PLEASE PRINT)

Name: Beryl Thurman

Address: P.O. Box 140502, S.I. NY. 10314

I represent: North Shore Waterfront Conservancy of Staten Island.

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: _____

(PLEASE PRINT)

Name: Jordan Chrysicopoulos

Address: 466 S 2nd St Brooklyn 11211

I represent: Citizens Campaign for the Environment

Address: 225 Main St Farmingdale NY 11735

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Greg Todd

Address: BSW AB

I represent: _____

Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Patricia Diamond

Address: 89 Dean St, Brooklyn 11201

I represent: Surfrider NYC

Address: 89 Dean St

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☒ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Isabelle Silverman

Address: 257 Park Ave South

I represent: Environmental Defense Fund

Address: EDF

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1480 Res. No. _____

☐ in favor ☑ in opposition

Date: 5/12/17

(PLEASE PRINT)

Name: Saleem Shah

Address: _____

I represent: Citizens Committee for New York City

Address: 77 Water St #702 NY NY 10005

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Margaret Conte

Address: 350 6 Ave

I represent: The Planet + 350 Brooklyn

Address: _____

Please complete this card and return to the Sergeant-at-Arms