

Statement by Mr. Paul J. Sincock
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Subcommittee on Research and Technology
of the United States House Committee on Science, Space, and Technology
“Closing the Loop: Emerging Technologies in Plastics Recycling”
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As a small-town City Manager or Chief Administrative Official, along with our administrative team we are responsible to implement the recycling policies of our local elected officials. From an environmental perspective the ability to cost effectively reduce, recycle and reuse products is a positive feature of the community. From a community perspective, offering recycling is wonderful and a source of community pride. From an administrative perspective, our job is to get our residents to get the recycles in a proper and acceptable format from the house to the curb to allow our vendor to collect and process.

We also must understand that recycling is a business and it is affected by various markets and cost centers. While recycling is the “right thing to do,” there is an economic side of the equation that needs to be considered. Every recycled product has a value and those values tend to go up and down over the course of time. There also needs to be an “end market” or new product than can be made from the old recycled product. Without a viable end market for the recycled goods, the value of the recycled goods goes down. The cost of collection, sorting and shipping must also be factored into the equation. When the value of collected recycles goes down, the municipal costs go up. When that happens, the local elected officials have the challenge of increasing the cost of recycling collections or eliminate parts of the program and potentially must landfill materials.

From a municipal perspective there are multitudes of differences nationally in recycling programs. There is no single method that works for every community across the region, state and country. In my home in the State of Michigan; recycling ranges from not offered, to a county wide drop off site, to a regional drop off site, to municipal drop off sites, to curbside programs with a recycle bucket/bin, to curbside programs with what is commonly seen as a trash cart. In my own City of Plymouth, our recycling program has evolved over the years from a staffed drop off center with limited hours, to a bagged system, to a bucket/bin system to the system we currently use which is an automated collection cart program. Our City also operates a bulk leaf collection program, which allows residents to rake fall leaves to the curb and City crews will collect them using claw device on a mini-front end load and then dumping into rear load solid waste truck.

We consider our recycling efforts to be successful and effective, because of our relatively high rates of recycling materials that are collected at the curb and our overall diversion of materials away from landfills. Between our City recycling efforts and municipal composting programs we have diverted away from landfills a 26-year average of 42% of materials collected through curbside solid waste, recycling or bulk leaf pick-ups.

Our local unit of government is still challenged by a variety of factors that goes into our programs. A simple increase in the cost of fuel will make a significant difference in the overall costs of the program. There are multiple trucks and other pieces of equipment that operate in our City in order to provide to timely effective pick up of containerized or bulk materials. A 20-cent increase in fuel costs could trigger fuel subsidy in contractor costs and it increases municipal costs for equipment operations as well. Everything in inter-related when it comes to solid waste and recycling issues. If the cost of processing recycling goes up significantly there may be a point; from the municipal perspective where we are forced to make a choice of collecting recycling or eliminating our recycling efforts due to costs.

In my City; our official Waste Stream Reports filed with the State of Michigan indicate that in 1992 we recycled 393.1 tons of materials or about 10% of our waste stream. In 2018 we recycled 972 tons of material or about 24.7% of our waste stream. During that same period from 1992 to 2018 our pounds of “trash” generated, per day/per person has risen from 2.2 pounds to 2.4 pounds per day/per person.

Our recycling programs would not be successful without the partnership we have with our vendor; Republic Services. Our staff meets regularly with our Municipal Services Manager who keeps us apprised of industry trends and what the future may hold for the solid waste and recycling industry. In addition, our vendor provides us with educational materials that we can adapt and reuse as a part of our efforts to educate our residents.



The vendor provides efficient, timely pick up of our residential recyclables and transports them to a Material Recovery Facility (MRF). Under the terms of our contract with the vendor, they would keep any money generated from the sale of bulk recyclables. However, the company also has the risk of market pressures on recycling and if the value of the bulk product goes down, the company takes on that risk.

In our City, the relationship between the vendor and the municipality has been excellent and we work together as a team to provide a high quality, easy to use system for the consumers and efficient pick up at the curb. We also work in partnership to continue to provide educational materials to our residents to help insure that our recyclables are of high quality with minimal contamination. Our current contract with our vendor is expiring this year. When we bid the contract later this spring, we anticipate having increases in bid costs for recycling services, due to the current trend in markets.

From a technology standpoint, our solid waste and recycling collection program is a pretty basic system for our residents, that provides for weekly pick up of solid waste and recyclables. They have one brown 65-gallon cart with wheels for solid waste (trash) and one blue 65-gallon cart with wheels for their recyclables. Our mission as a municipality is to help make sure that our residents understand what is acceptable and what is not acceptable. We also must work with our residents to properly prepare materials prior to placing them in the recycle cart.



During the summer and fall seasons we also offer compost pick up with a third truck. As previously indicated, we also offer a bulk leaf pick up in the fall by municipal crews. Although, we have expended a lot of time, through education encouraging our residents to use mulching mowers. The lawn care industry has also helped by increasing the technology of modern lawn mower design and current designs do an excellent job of fine cutting grass and leaves to be composted on the lawn itself, rather than being collected. From 2010 to 2018 we have seen our volume of compostable yard waste (grass & leaves) go down from just over 641 tons to 519.5 tons of material.

Through meetings with our vendor we are aware that the end markets for recyclables are demanding product with a significantly lower contamination rates than previously allowed. Probably the best “visual” that I could give you is that we have what we would call the cardboard pizza box and it is a recyclable product in our system and perfectly acceptable. However, the greasy cardboard pizza box is not acceptable. If a couple of greasy pizza boxes end up in the cardboard recycles, then that could

contaminate the entire load (most likely a bail) of cardboard and make the value somewhere at or below zero. At that point the vendor must make a choice of holding the material and expend resources on storage or to send the material to the landfill. Therefore, the partnership on education between the vendor and the municipality is so critical and must be on-going for the residents.

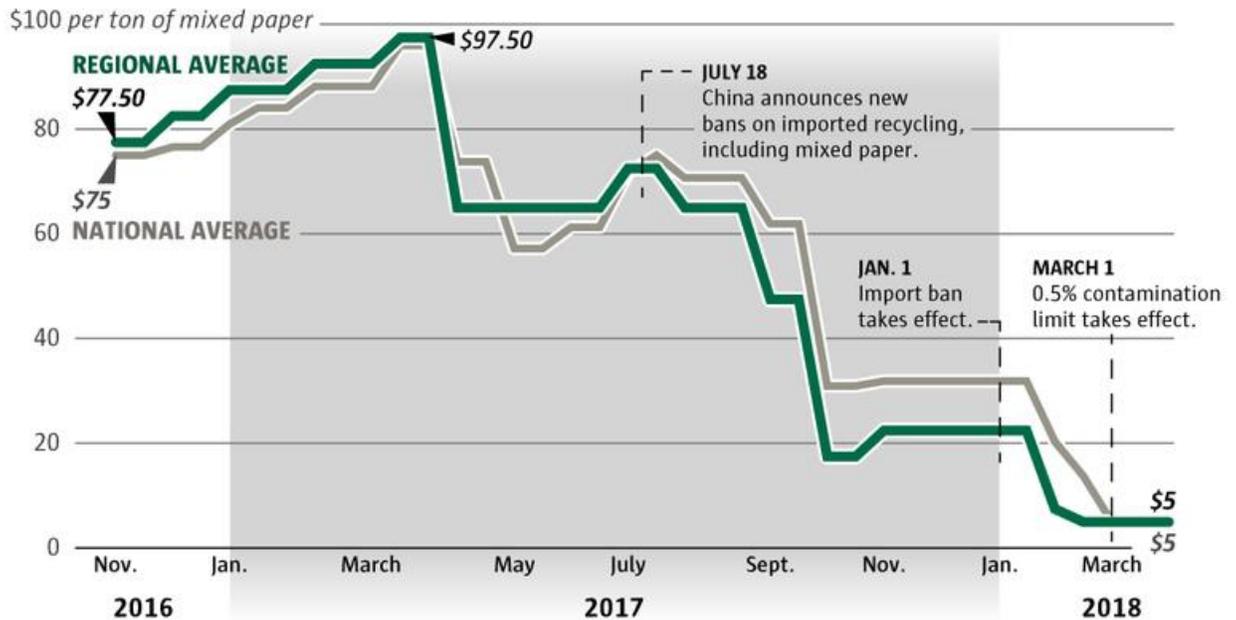
We are currently using a large national corporation as our solid waste and recycling vendor and as previously indicated we have an excellent partnership with the vendor. Republic Services provides collection and processing services in 40 states covering 240 markets with approximately 35,000 employees. This is important from the standpoint that the company will generate the volumes of materials that will allow them to be able to place materials in a variety of different markets to possibly obtain a positive value for recycled goods.

Our municipality alone does not generate the volume of materials needed to provide sorting and recycling services. Our region does provide necessary volumes and the use of private contractors who provides collections from several communities, basically allows us to offer solid waste and recycling services to our residents at a reasonable cost. Again, we anticipate price increases with a new contract later this year as we come to the end of our current five-year contract with the vendor.

While recycling is the “right thing to do” it is also a business and we must be very aware of the business side of recycling. Some materials have limited end markets, some materials are changing faster than the capital investment cycle to keep up with the changes. Perhaps, future technology will allow us to expand end markets and to keep up with changes of materials. I would indicate that in January of this year it was reported to our community that in the plastics industry HDPE had a “good market”, but PET had limited end markets. Plastic water bottles have changed significantly over a period of time. Manufactures are “light-weighting” the bottles. While that makes the bottle a little lighter for the purchaser/user of the bottle and it makes shipping slightly lighter, which affects transportation costs. From a recycling standpoint it took 48,000 plastic water bottles to equal one ton of recovered materials in the year 2000, in 2015 it took 92,000 plastic bottles to make that same ton of recovered product and the value of that ton of material is less. We are also now finding that end users of recyclables are requiring significantly less contamination in any load, which is also affecting pricing. The fact that one of the largest importers of recyclables has closed the door on accepting new product, has significantly reduced the value of the products. The Seattle Times using data from RecyclingMarkets.net ran this graphic showing the affects on the value of recyclables in the Pacific Northwest and across North America.

China closes the door, prices crash

The average price paid to recyclers for a ton of mixed paper in the Pacific Northwest and across North America has plummeted in the last year.



Source: RecyclingMarkets.net

EMILY M. ENG / THE SEATTLE TIMES

In our small Michigan municipality, it is our job to educate the residents on an on-going basis to help insure that the quality of our recycled materials is clean and acceptable. Municipalities across the country must have programs that allows our residents to easily recycle materials, rather than throwing them out and landfilling the materials. Municipalities must also provide on-going education for residents to stay informed and to help insure a “quality” recyclable item enters the recycle stream. At a minimum, it must be just as easy to recycle something as it is to throw it out in the trash. Ideally, it would be easier for the homeowner/resident to recycle a product rather than throw it out. Due to the abundance of recycling programs available at home and at the office, we are seeing that people are aware of their personal trash volume and at least in our community look to recycle when possible. You are seeing corporations looking for ways to reduce the use of plastics, including simple things like plastic straws, due mainly in part to consumer awareness. Over the years you have seen food establishments switch from Styrofoam boxes to paper boxes as a part of their environmental efforts and in part, being driven by consumer demands and in some cases governmental requirements.

In my home State of Michigan, we have what is commonly known as a “bottle bill,” and basically any carbonated beverage has a charge of 10 cents per bottle or can on the product. This is mandated by State Law. The 10 cents is returned to the consumer when they return the empty bottle or can to a store that sells that product. When the law first took effect, it took a while for consumers to catch on as well as those processing and handling product and the returnables. Technology has helped and now

stores are using bar code scanners when returning cans and bottles and it is a basically self-serv program for consumers. Personally, I would rate the Michigan Bottle Bill as a success as it has helped insure that these recyclable items are returned to be recycled.

The Michigan Bottle Bill has resulted in our highways being cleaner as there is less debris from returnable bottles and cans. While the private sector was concerned about the implementation of the Bottle Bill and they may still have many of those concerns today. However, from the consumer stand point; it is an easy to use system and education of consumers is also fairly easy to explain to new residents of the state or visitors to our Great Lakes State.

As a result of the Michigan Bottle Bill; the private sector has changed their methods of collections, implemented some technology and the system is fairly effective. There are still issues with bottles and cans from other states that may have been transported into Michigan. There are still issues with store branded products that are purchased at stores different from the one you are attempting to return the item to. The issue of plastics recycling is significant as we are effectively collecting it, but how do we cost effectively recycle it. There are still some flaws in the system and not every bottle or can is recycled. However, as the law took effect and it took some time to develop methods to efficiently handle products. I am sure that even today; in some areas of our State it is easier to handle and process returnables than it is in other more parts of our State.

The Michigan Bottle Bill is an example of the government and private sector working together to create some positive achievements. The positive of this program is that we have created a significant amount of recyclable material that is being prepared to be recycled. We have closed the loop on the reducing, recycling and reusing products, which is the goal of any recycling program. Although, we still have the issue of plastics. Obviously, metal cans are much easier to recycle and can “close the loop” fairly quickly.

One of the biggest issues related to the “Bottle Bill” that I hear about is the fact that uncarbonated plastic water bottles (just plain water) are NOT included in the required deposit. Again, the program is not 100% effective, it HAS caused more recycling, more work for consumers and those handling products at the retail and wholesale levels. Plastic recycling is an issue that needs to have a cost-effective end market for all of those plastic bottles that we collect to have a totally effective program.

In order to have a successful program of recycling the municipality must help insure that product is recycled and not landfilled. Creditability of recycling rests at all levels of government as each level will need to have their own piece of the “recycling pie.” As an example; there is no national bottle bill and deposits on bottles and cans vary from state to state and range from zero to some price established by the state. The local level of government is where recycling starts. The local unit must provide on-going education for its residents in order to have an effective program.

However, in order to have a successful and creditable program there must be viable end markets for the materials collected and hopefully future technology in processing will help create more end markets for the products we collect. In order to Reduce, Recycle and Reuse products there must be an end market for the product to be fully recycled and reused. We must all agree that recycling is the right thing to do, but that it is also a market driven program that depends on technology to develop end uses for collected materials. We must also provide our residents with a program that is easy to follow and allow us to move materials from the house to the curb and ultimately recycled at a reasonable cost.



We must remember that while recycling starts at home, it still must be collected in some fashion, sorted, bailed and ultimately turned into a new product that allows the reuse of the original container. The recycling process is a journey that starts at home but travels through many hands before becoming a new product. We must insure that we close the "loop" on reducing, recycling and reusing products and we must have an end use for the products that we recycle.