





Welcome to **Plastic Pollution Solution**

June 21, 2018

Our 2018 Sustainability Sessions were made possible in part with the support of the following sponsors:

















History of Plastics Recycling in New Jersey

Steve Rinaldi, NJDEP





I am going to...



- Review
 - ✓ Solid Waste & Recycling History in New Jersey
- Frame
 - ✓ The Complex Nature of Plastics
- Describe
 - ✓ What we Know About Plastics in New Jersey
- Discuss
 - ✓ Challenges Ahead of Us— Problems To Overcome
- Present
 - ✓ Command & Control v. Advocacy Options
- Brainstorm
 - ✓ What Technology Can Bring to the Table
- Forecast
 - Darkening Skies on the International Horizon!



A Brief History of Plastics



- 1862 1st Man-Made Plastic Created by Alexander Parkes at the Great International Exposition – London;
- 1868 First Commercial Product Billiard Balls;
- 1872 PVC First Created;
- 1908 Cellophane First Marketed;
- 1926 Vinyl Invented from PVC;
- 1939 Nylon and Neoprene Invented to Replace Silk;
- 1941 PET Invented;
- 1951 HDPE First Introduced;
- 1953 Saran Wrap Introduced by Dow Chemical;
- 1954 Styrofoam Invented;
- 1967 The "Graduate" with Dustin Hoffman "The Future is Plastic"
- 1970 Dacron Polyester Used in Clothing;







Where it all began – NJ Recycling



- 1982 "Recycling in the '80's"
- 1987 Mandatory Recycling
 - "Floor" of Recycling "3 Materials, plus Leaves"
- Glass Containers, Aluminum Cans & Newspaper
- NO ONE Exempt!!!
- Down to "Kitchen Level"
- 1993 Plan and Integrated 8
 Waste Management







Where We Are Today...



- MANDATORY
- County-By-County
- Adopted Recycling Plans
- State Goal 50% & 60%
- 23.8 Million Tons Generated
- 14.9 Million Tons is Recycled
- Total = 63% Rate 2015 Data
- Municipal Recycling Rate = 43%
- Curbside Recycling Very Effective!





Mandated Materials For Recycling:



- We started with "3 Materials Plus Leaves"
- Today, the average number of "Designated Materials" has reached 17! (8 Counties Designate over 20)
- Only Plastics Category for Designation is:
 - HDPE/PET Plastic in 19 Counties

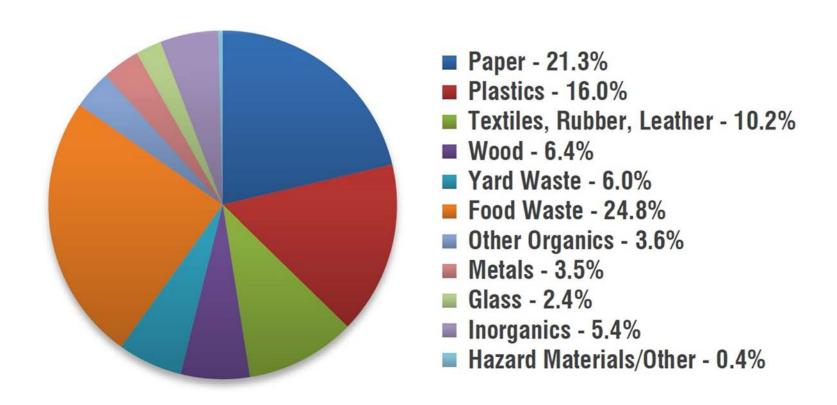


- Our focus today on Three Plastics Categories:
 - Plastic Containers (#1 PET & #2 HDPE)
 - Plastic Scrap (Car parts, furniture, pallets)
 - Other Plastic (#4 LDPE film or bags)
- Review of the Trends



What's Left in the Can After 30 Years of Mandatory Recycling?????







The Complexity of Plastics



WHAT DO RECYCLING SYMBOLS ON PLASTICS MEAN?



PET, PETE

(Polyethylene Terephthalate)

- Soft drink, water and salad dressing bottles; peanut butter and jam jars...
- Suitable to store cold or warm drinks. Bad idea for hot drinks.



HDPE

(High-density Polyethylene)

 Water pipes, milk, juice and water bottles; grocery bags, some shampoo / toiletry bottles...



PVC

(Polyvinyl Chloride)

- · Not used for food packaging.
- Pipes, cables, furniture, clothes, toys...



LDPE

(Low-density Polyethylene)

 Frozen food bags; squeezable bottles, e.g. honey, mustard; cling films; flexible container lids....



PP

(Polypropylene)

 Reusable microwaveable ware; kitchenware; yogurt containers; microwaveable disposable take-away containers; disposable cups; plates....



PS

(Polystyrene)

 Egg cartons; packing peanuts; disposable cups, plates, trays and cutlery; disposable take-away containers;
 A void for food storage!



Other

(often polycarbonate or ABS)

 Beverage bottles; baby milk bottles. compact discs; "unbreakable" glazing; lenses including sunglasses, prescription glasses, automotive headlamps, riot shields, instrument panels...



Safe food containers are made from number 1, 2, 4, and 5 plastics.



Plastic Packaging Challenges



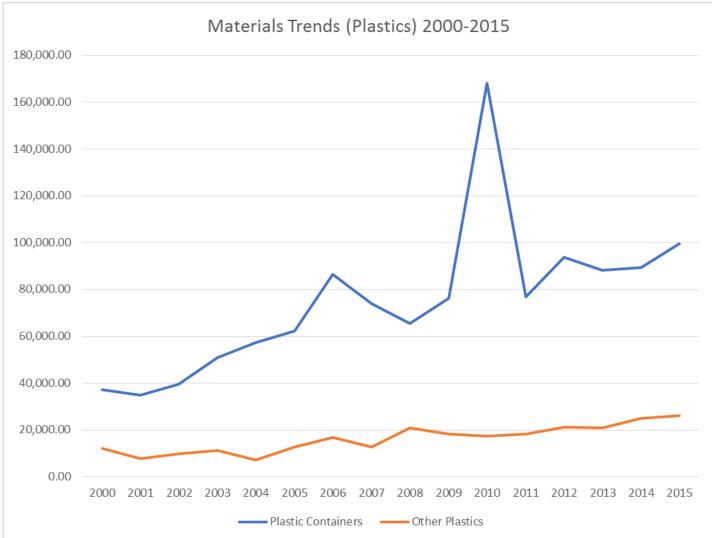
- 100 MILLION Tons Manufactured Globally Annually;
- In the U.S. only about 10% is recovered of all Plastic;
- Problematic Packaging:
 - Pigmented Plastic (Laundry Containers);
 - Lightweighting Trend;
 - Multilayered Laminated Pouches;
 - Decorative Advertising of Different Resins;
- Single Stream Increases Volume Much Lower Value;
- Tremendous Confusion on What is and Isn't Recyclable!





Plastics Recycling Trending Up







Plastics Recycling Breakouts



- IPF's or MRF's Process "Post-Consumer" Plastics;
- Normal Breakout Categories:
 - PET: Clear Water Bottles
 - HDPE Natural: Milk Containers
 - HDPE Color: Laundry Detergent Containers
 - LDPE Film Natural: Dry Cleaner Bags
 - LDPE Film Colored: Clothing Bags
 - Mixed Rigid: Spackling Buckets, Kids Toys
 - Other 3 7 Plastic: Yogurt and other Containers
 - PVC: White and Dark Piping, Etc.





Current Market Conditions



- China .5% Contamination Level Nearly Impossible to Meet;
- Outright ban on the acceptance of Mixed Paper material piling up with no current outlet;
- Significant Drop in Material Value MRF's Fighting to Survive;
- MRF's Charging Higher Prices, Dropping Single Stream;
- MRF's Forced to Run at Slower Speeds to Improve Quality;
- MRF's Adding New Technology to Assist in Sorting Process;
- Mixed Paper and Glass Getting Landfilled;
- Zero Market for 3 7 Plastics at This Time.





Where The Stuff Goes???



- Domestic Markets in the U.S. and Canada (considered "Domestic")
- China is de facto Shut Down! Material to India and.....
- The "Asian Six"
 - South Korea
 - Indonesia
 - Malaysia
 - Vietnam
 - Singapore
 - Thailand





How to Manage Plastics???



- Bans on Sale or Use Straws and Film Plastic Bags;
- Surcharges on Plastic Bags (and possibly paper) at Supermarkets and other Points of Sale;
- Federal Incentives to Stimulate New Outlets for 3 7
 Plastics;
- Subsidies for High Technology Plastics Processing:
 - Green Mantra Plastic to Wax Technology;
 - LOOP Industries Alternative PET Processing;
 - QRS Simply Recycle 3 7 Flake Process;
 - Chesapeake Integrated Bio-Energy Project



Command & Control Actions



- Additional Designation of Plastics for Recycling Through County Plans:
 - Plastic Scrap Not Designated
 - Other Plastic Not Designated (Film)
 - Why Doesn't Gloucester and Monmouth Designate Any Plastics for Recycling?
- Bag & Straw Bans or Surcharge Legislation (Reusables)
- Stepped up Education & Enforcement
- State Leadership (State Plan/County Planning)
- Incentives for Development of Domestic Markets
- Do we Stop Collecting Some Plastics?







Highland Park Plastic Bag Reduction Campaign

Tina Weishaus, Chair, Sustainable Highland Park

Awarded May 2017 | \$10,000 | Funded by Sustainable Jersey and PSEG





Build the Broadest Coalition



- Municipal Government
- Business Community
- Residents
- Schools
- Faith Community







PRISABLES ARE FANTASI











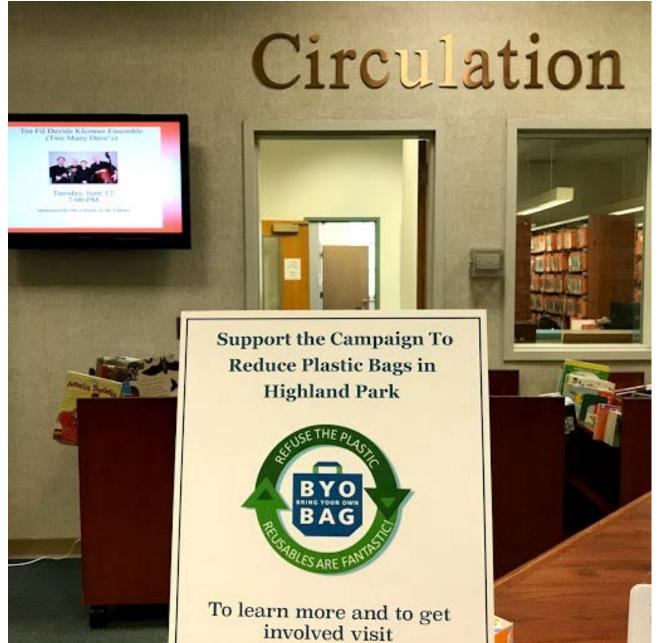
























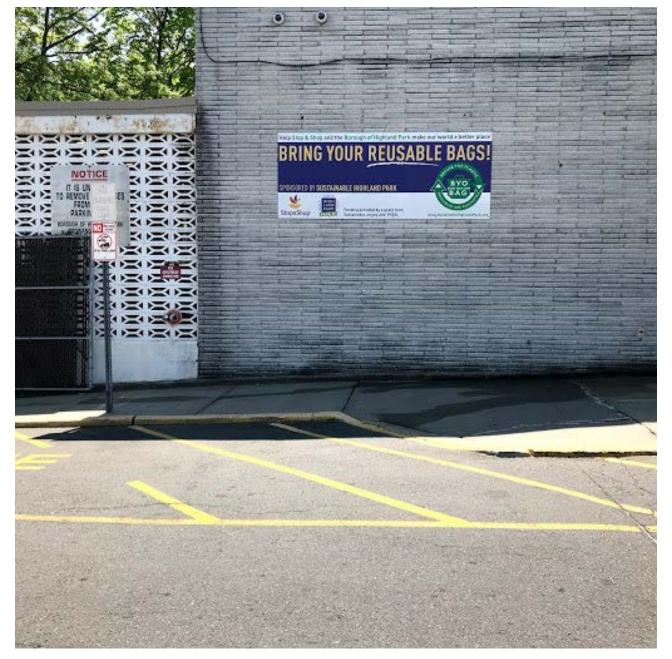


















Impacts & Outcomes





Plastic Bag Reduction Initiative







Highland

Park镇自治市政府已经获得了\$10,00 0的赠款,以减少使用单一的塑料袋 (如食品储藏室和超市中使用的塑料 袋),这些袋子污染了我们的土地, 水路和海洋,严重危害了动物和人类 !

我们需要您的帮助!

从九月份开始食品储藏室将分发免费 的可回收袋子,限制使用塑料袋。

要求您将自己的可重复使用袋子带到食物发放处。

请别忘记带上您的袋子可重复使用!! !

更多咨询请上网

www.sustainablehighlandpark.org

Sustainable Highland Park, a HP Borough has been awarded \$10,000 to reduce the use of single use plastic bags (like the ones used in the food pantry and the supermarkets). These bags pollute our landscape and escape into our waterways and oceans where they are harmful to animals and humans.

We need your help!!

Starting in September, the Food Pantry will distribute FREE reusable bags and will limit the use of plastic bags.

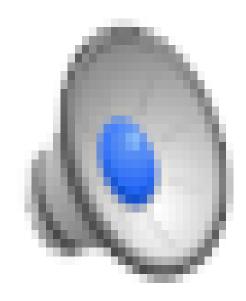
















Lessons Learned & Challenges



Next Steps



- Work with Council on an ordinance
- Expanding campaign to straws and other plastics
- More clean ups

Remember Your Reusable Bags



www.sustainablehighlandpark.org







Sustainable Margate & Plastics

Monica Coffey, Chair, Sustainable Margate









Plastics Trivia



Join on your mobile device: kahoot.it

Game Pin: Use website PIN







Sustainable Jersey and Plastics

Renee Haider, Sustainable Jersey





Actions for Points: Non-Mandated Materials Recycling



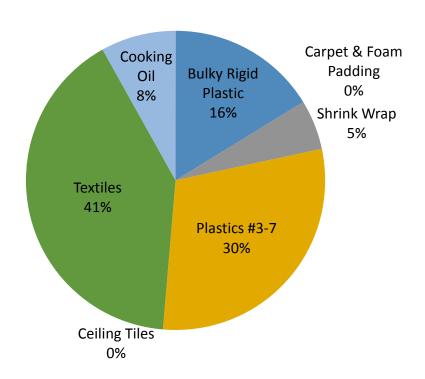
- Bulky rigid plastics (10 pts)
- Shrink wrap (5 pts)
- Plastics #3-7 (10 pts)
- Other (5-10 pts)







2017 Approved Actions





Actions for Points: Reusable Bag **Education Program**



Action Requirements

o Develop a campaign that includes public announcements, outreach to local businesses, outreach events, distribution of printed materials, involvement of schools, bag design contests, creation of PSAs, BAG IT film screening, reusable bag & window cling giveaways, etc.

o OPTIONAL: Resolution or ordinance supporting the use of reusable bags, or charging a fee for a single use bag (paper or plastic)

Film Screenings

- o Bag It
- o Plastic Paradise



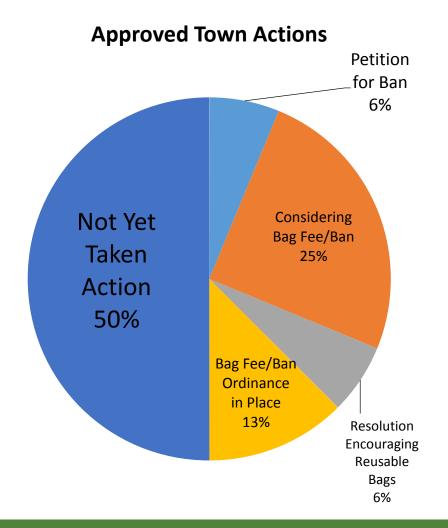




Reusable Bag Education Program: Programs in Place



- Bordentown City (Burlington)
- Caldwell Borough (Essex)
- Jersey City (Hudson)
- Hoboken City (Hudson)
- Princeton (Mercer)
- Oradell Borough (Bergen)
- Upper Township (Cape May)





Pending NJ Legislation



- A-1218: Provides for the decrease and eventual ban on use of non-compostable plastic grocery bags at retail stores.
- A-4040: Provides for the decrease and eventual ban on use of non-compostable plastic carryout bags at stores.
 Violations apply.
- A-3267: Establishes a fee on the use of single-use carryout bags provided by certain types of stores to customers and dedicate revenue from the fee to the "Healthy Schools and Community Lead Abatement Fund" established in the bill.



What's Next?



- Sustainable Jersey will be re-evaluating the reusable bag education action and addressing other single use plastics in potential new actions.
- If you want to join the discussion on the Waste Management Task Force, email Samantha McGraw at mcgraws@tcnj.edu.









A Few Final Thoughts







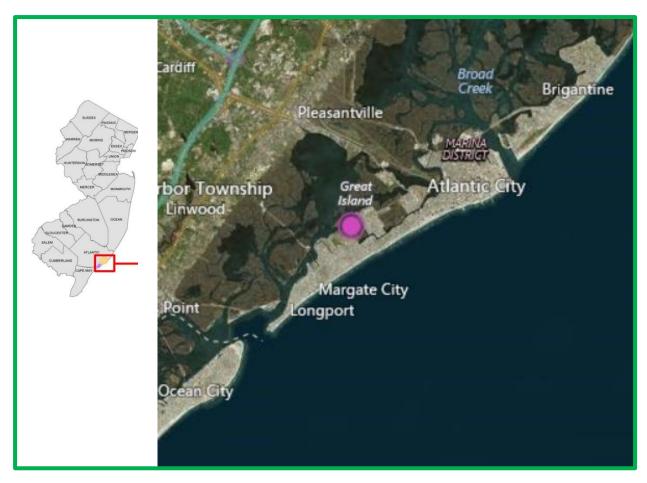


PLANTAGOOD WINDS

THE PARTY OF THE P



Absecon Island





Superstorm Sandy, October 2012









Beach Litter



Beach Litter







The Issue with Plastic

 The Journal Science has estimated that approximately 8 million tons of plastic enter the ocean each year.

 The World Economic Forum estimates by 2050, the ocean will contain as much plastic as fish, pound for

pound

 Plastic bags are the most abundant floating litter objects in the ocean



Impacts

- In the last decade, wildlife entanglement of marine debris by marine animals has increased by 40%.
- It is well known, that animals, including turtles, seabirds, and marine mammals can ingest marine litter.
- 50-80 % of dead sea turtles have ingested plastic

Plastic bags are also a major litter issue







Why plastic bass?







29 million bags generated by Absecon Island residents each year

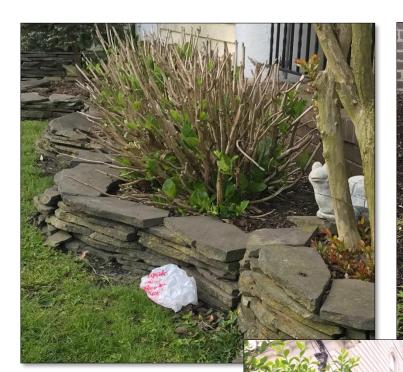
Countywide: 138 million/year

Worldwide: 2 million per

minute















Surfrider Cleanups Wellington Ave., Ventnor

1,089 plastic bags picked up by volunteers over the course of two cleanups







Why plastic bags?

- Bags are one of the more regulated types of plastic of single-use plastics, compared to straws, for example, or Styrofoam
- At least 300 local bag ordinances here in the US
- Bags are convenient, but not essential
- Very difficult to recycle and they endanger workers
- Currently all plastic bags that come into ACUA's recycling center are being landfilled.









Sustainable Downbeach

LONGPORT, MARGATE AND VENTNOR WORKING TOGETHER FOR A GREENER ABSECON ISLAND















New Jersey residents use an average of 3.3 billion single use shopping bags annually - 500 bags for each adult in the state. 8,371 littered plastic bags were collected along the New Jersey coast in six hours in 2013.

Help Us Be "Plastic Free" And "BYOB"!

BYOB

New Jersey residents use an average of 3.3 billion single use shopping bags annually - 500 bags for each adult in the state.

8,371 littered shopping bags were collected along the New Jersey coast in six hours in 2013.

















Sustainable Downbeach LONGPORT, MARGATE AND VENTNOR WORKING TOGETHER FOR A GREENER ABSECON ISLAND

Beach Tag Envelopes



Side #2

Trash and recycling containers are located at every block for your convenience.

Please do not leave trash, cigarette butts or beach items on the sand.

Two tides a day can carry debris into the ocean.

Please also fill any holes that you dig.

Thank you for keeping Margate beach

~ Margate C



Ventnor is partnering with Margate and Longport to raise awareness about plastic bags.

Side #1

As coastal communities, protecting our beaches and ocean from litter is a top priority.

Please do your part by saying 'No, thank you' to unnecessary bags and by bringing your own bags with you when you shop.

When visiting Ventnor beaches, please remember to leave only your footprints behind.



Longport is partnering with Margate and Ventnor to raise awareness about plastic bags.

As coastal communities, protecting our beaches and ocean from litter is a top priority.

please do your part by saying 'No, thank you' cessary bags and by bringing n bags with you when you shop. side #2

Trash and recycling containers are located every block for your convenience.

Please deposit food and beverage containers, cigarette butts, unwanted toys and beach items into them.

Please do not leave anything on the sand.

Two tides a day can carry debris into the ocean.

If you leave "it in the sand" it will wind up in the ocean.

Please fill all holes that you dig, before you leave.

Holes are a hazard to our city employees and machinery.

> Thank you! Ventnor City





LONGPORT, MARGATE AND VENTNOR WORKING TOGETHER FOR A GREENER ABSECON ISLAND



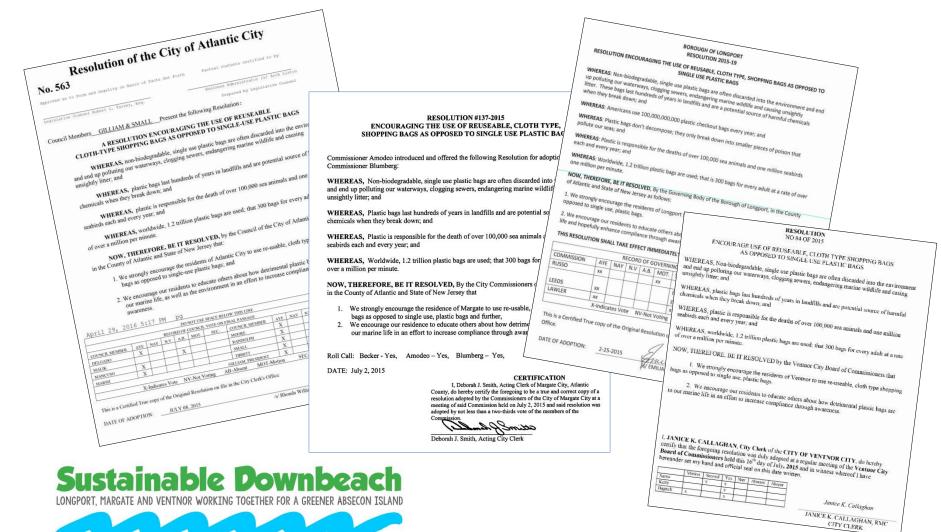


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Absecon Island: Reusable Bag Resolutions





Sustainable Downbeach LONGPORT, MARGATE AND VENTNOR WORKING TOGETHER FOR A GREENER ABSECON ISLAND









Downbeach communities continue to raise awareness about single-use bags

Justic bags, just in a bags, in conjunction with the surfrider Foundation South Jersey Chapter, are bosting a second showing of the award-winning a second showing of the award-winning documentary film "Bag It: Is Your Life Too Plastic?" for local businesses 7-9 p.m. Thursday, April at Ventnor Coffee. There is no charge to attend. Light hors d'oeuvres will be served.

"Bag It" follows "Everyment".

"Bag It" follows "everyman" Jeb Berrier as he ries to make sense of our dependence on plastic bags. The average American uses about 500 plastic bags each year, for about 12 minutes each. This single-use mentality has led to the formation of a floating island of plastic debris in the Pacific Ocean more than twice the size of Texas.

"This screening is another step in the effort to raise awareness and get more residents to use reusable bags," said Ventnor Green Team member Diane Birkbeck. "The amount of trash and litter created by single-use plastic bags is a big concern for us."

"When you calculate the number of bags generated by Downbeach residents alone – close to 9 million each year – it's not hard to understand why

plastic bags are seemingly everywhere," said Monica Coffey, Sustainable Margate chairwoman. "And as coastal communities, we have a responsibility to hold ourselves accountable to a higher standard."

"Thankfully, the message seems to be resonating with both residents and businesses, but we still have work to do."

"Surfrider Foundation supports increasing education about plastic bags, which is why we are partnering on this important issue with Margate, Ventnor and Longport," said Surfrider's South Jersey Chairwoman Beth Kwart. "As an organization, we are committed to protecting and enjoying our oceans, waves, and beaches.

He called plastic bags "an unnecessary nuisance – they harm wildlife, are made from oil, cannot decompose, are not easy to recycle, and no one wants to see them stuck in the dunes or blowing into the ocean."

Kwart, will lead a discussion following the movie.

All Downbeach businesses are invited to attend the event. The event is free, but seating is limited. RSVP by April 6 to NIVGoGreen@yahoo.com.



November 2015 Longport becomes first NJ town to place fee on plastic and paper bags



Press of Atlantic City editorial February 22, 2018

 $http://www.pressofatlanticcity.com/news/breaking/our-view-plastic-bag-bans-good-by-towns-better-by/article_d7244cda-ccd1-56c3-bd07-134f3fc9937c.html \\$

Our view: Plastic bag bans good by towns, better by state, best by nation

10 hrs ago

Atlantic County freeholders consider banning plastic bags in county parks



Ventnor to discuss single-use bag fee

New Jersey may like to think of itself as an environmental leader, with many Superfund cleanups and lots of solar energ production for a small and not especially sunny state.

But regarding one of the most direct impairments of the environment — polluting it with nearly indestructible plastic waste — New Jersey is one of the worst offenders. It's a coast state that is contributing to the plastic pollution crisis that has covered a third of the world's ocean surfaces. And only a few municipalities have stepped up to reduce or eliminate wholly unneeded single-use plastic bags.

Locally, the Brigantine farmers market got things started in 2015 with a ban on disposable plastic shopping bags.

Later that year, Longport became the first town in New Jersey to discourage non-reusable carryout bags, by requiring a fee at least 10 cents each for them.

Long Beach Township has enacted a bag ban that will take effect in May, and Teaneck in Bergen County will require a 5-cent fee as of July.

WHYY

COMMUNITY NEW JERSEY

Down the Shore

Another Shore town proposes bag fee ordinance

By Justin Auciello · February 12, 2018



(AP Photo/Richard Drew)

Ventnor is the latest Jersey Shore municipality to propose a fee for single-use bags.

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Ventnor commissioners approve carryout bag fee ordinance

February 23, 2018

VENTNOR - The city has become the second municipality in Atlantic County to impose a fee on single-use carryout bags.

After nearly two years of consideration, the Board of Commissioners held a public hearing Thursday, Feb. 22 and



By Michaelis Scientists

which imposes a 5-cent fee on carryout paper, plastic and "reusable" plastic bags with a unanimously approved the ordinance, thicker millage. The fee will be charged at the checkout counter in all stores, except dine-in restaurants, and be retained by the store owner.

Shoppers who do not want to pay the 5-cent fee for each bag they take from the store will have to bring their own reusable bags when they go shopping in Ventnor.

"The bottom line is this ordinance is a culture change for future generations," Mayor Beth Holtzman said. "We're not doing it to fine people and drag them into municipal court every week. It's to change the culture and have people use reuable bags and make this part of New Jersey more green."

Commissioner Tim Kriebel said he struggled with his affirmative vote, because he was concerned about the impact the ordinance would have on small and large businesses in the city.

"There are plenty of reasons to not do this. What tips the scales for me is that we are a coastal community. We are uniquely responsible for our environment. And we also have

Ventnor ordinance takes effect October 1, 2018

\$10,000 Sustainable Jersey grant for reusable bag outreach and education





Atlantic County Executive Office

609/343-2201 FAX: 343-2194 TDD: 348-5551

May 14, 2018

Dear Mayor and Council/Commission/Committee members:

It is long overdue that we, as elected officials, have a serious discussion on the use of disposable plastics, such as plastic bags, water bottles, and food packaging. Approximately 300 million tons of plastic are produced each year, most of which cannot be recycled.

For years, many of us have advocated for a reasonable approach to curbing the use of plastic. Perhaps a realistic start would be the elimination of plastic bags, which are everywhere we look. Our lakes, rivers, forested areas, parks, and downtowns are littered with the ubiquitous plastic bag. A substantial amount end up in our storm drains and inevitably in our ocean. As a result, bits of plastic enter our food chain through the fish and shellfish we eat. Marine mammals often mistakenly ingest plastic debris causing them harm if not death. About 94% of all sea birds have plastic in their stomachs.

New Jersey has no "bottle bill" like other states, including our neighbors Delaware and New York, that use it to encourage people to return these containers that account for as much as 60% of litter and clog our sewers, streets, waterways and wilderness areas. But a ban on non-compostable plastic bags could be implemented without state legislation.

Longport and Ventnor stand at the forefront on this issue in Atlantic County as both towns have instituted policies on single-use bags to reduce the amount of waste and its negative impact on our environment. Other New Jersey municipalities have passed or are considering these policies.

Many more communities have periodic "beach sweeps" or other cleamsp events around rivers, lakes and wooded areas.

The county recently participated in a cleamsp that collected 35 bags of recyclables. Regardless of the location, more than 90% of the litter collected at these events is plastic!

County government cannot legislate to municipalities as state governments can; we can only suggest. In the meantime, the Board of Freeholders will pass an ordinance to eliminate plastic bags from the more than 7,000 acres of county parks.

Perhaps each municipality could form a committee consisting of both environmentally-committed citizens as well as those not as committed, to make their recommendations to their governing body, and/or to urge our state legislators to create a comprehensive state plan as New York, among others, is doing. Either way the discussion may serve to raise public consciousness.







Atlantic County Government Gets on Board May 2018

This movement began in Demark with Italy and Ireland soon following suit. Since then many nations have instituted bans. And the European Union has required an 80% reduction of plastic bags by 2019.

New Jersey is the Garden State where we enjoy clean rivers, lakes, ocean water, pristine wooded areas, and a rich agricultural history. It's time we do more to easure our ability to live up to our motio.

Sincerely,

Dennis Levinson
County Essentive

c: Atlantic County Board of Fresholders







Web: tinyurl.com/abseconislandbaycleanup Phone 609-412-3635

Are you tired of seeing trash f loating in our bays, marshes, and around our waterways? Let's do something about it. We're picking up trash on land and by water on boats, kayaks, and paddleboards. Come out and do your part to beautify our back bays.

Special thanks:

Sustainable Downbeach, Teal Cruises, Ventnor, Margate City, Longport, Atlantic City Clean Communities Program, 95.1 WAYY, Margate Business Association, Newport Marine Inc, Atlantic County Utilities Authority, Steve & Cookies, Ventnor Tourism, Surfrider Foundation South Jersey Chapter, Ventnor Go Green, Ray Scott Dock

Debris Collection Locations:





Newport Marine - 6403 Sunset Ave Viking Rowing Club - Surrey & Calvert Ave





Longport City Hall Dock 24th Ave and the Bay

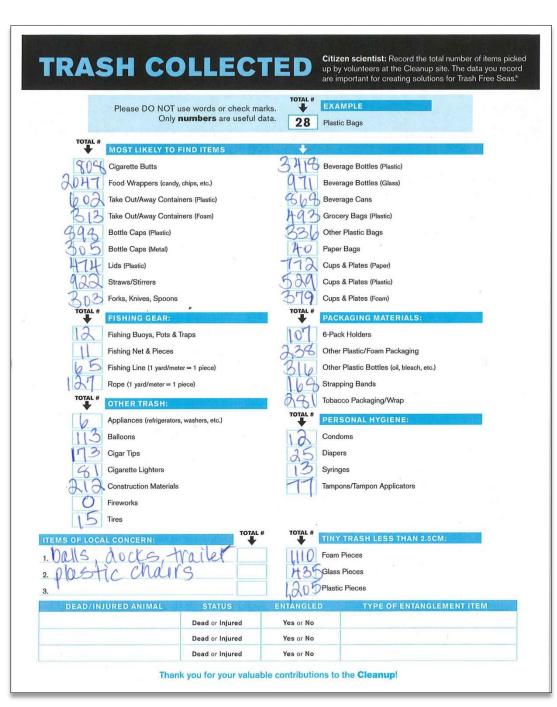
1st Annual Absecon Island **Back Bay** Cleanup



1st Annual Absecon Island Back Bay Cleanup







1st Annual Absecon Island Back Bay Cleanup

13,700 pounds od debris collected by 177 volunteers!



2014: Margate Says 'No' to Balloon Litter

Proposed Ordinance for Margate City, NJ

"The intentional releasing of helium balloons including latex and mylar into the atmosphere is prohibited under Margate City law."

 $_{(1)}$ Margate finds that the release into the atmosphere of balloons, inflated with lighter-Release of balloons than-air gases pose a danger and nuisance to the environment, particularly to wildlife

(2) It is unlawful for any person, firm, or corporation to intentionally release, organize and marine animals. the release, or intentionally cause to be released balloons inflated with a gas that is lighter than air except for:

(a) Balloons released by a person on behalf of a governmental agency or pursuant to a governmental contract for scientific or meteorological purposes;

(b) Hot air balloons that are recovered after launching; or

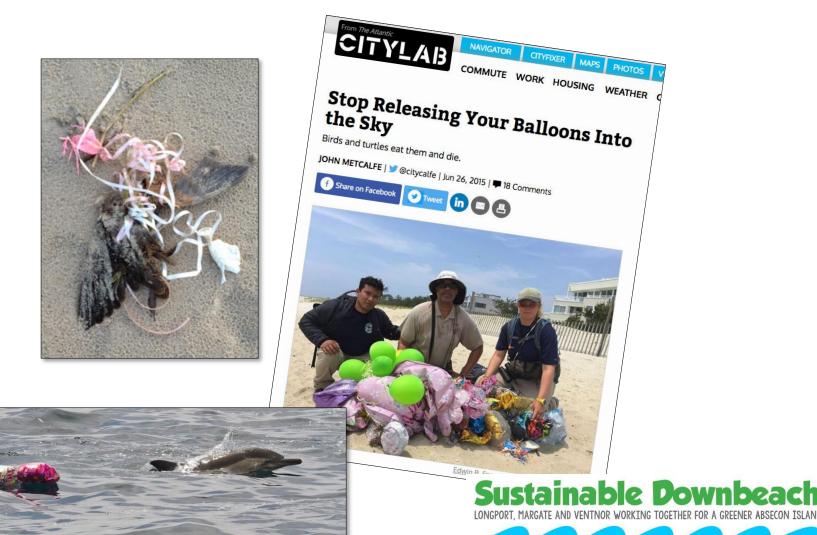
(c) Balloons released indoors

(3) Any person found in violation is guilty of a noncriminal infraction, punishable by a

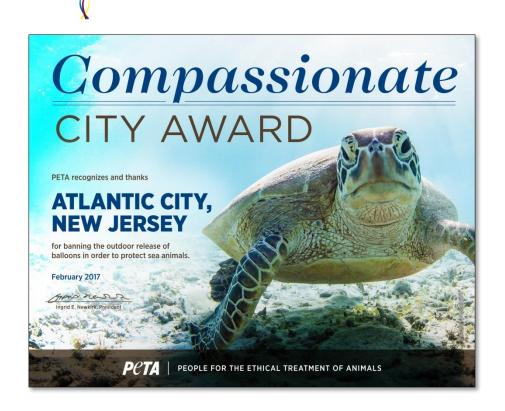


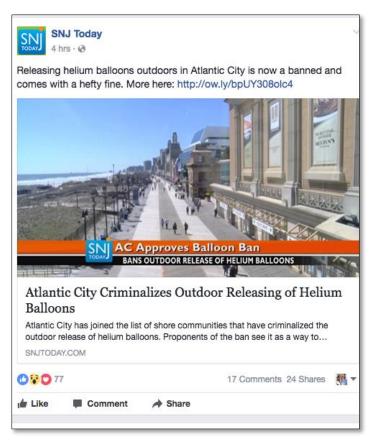


National Coverage of Balloons Collected at Forsythe National Wildlife Refuge

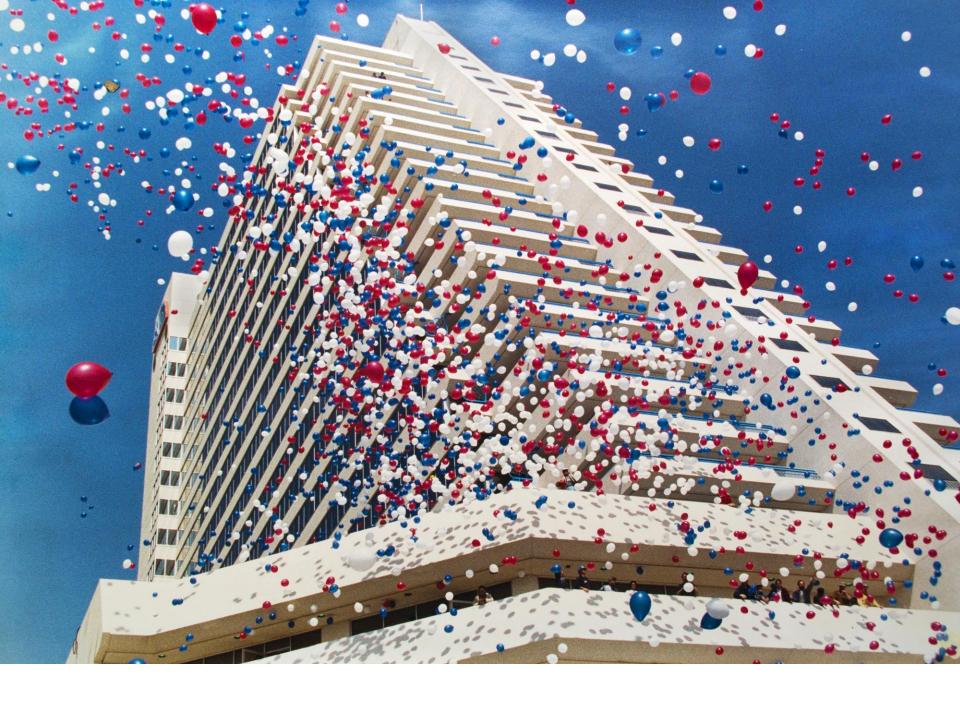


All four Absecon Island say 'No' to the intentional release of balloons





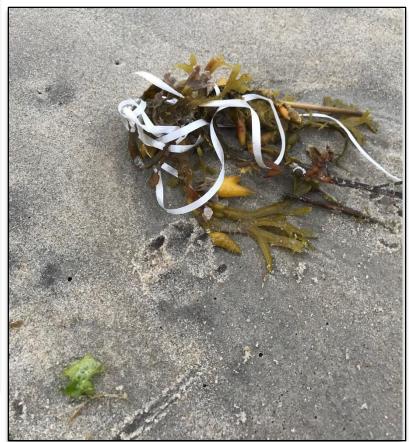






















Balloons: More needs to be done

Statewide legislation sponsored by the late Senator Whelan finally has new sponsors and new bill numbers







What's ahead?



Continue plastic bag outreach/education work in Ventnor, while continuing outreach and education in Margate and Atlantic City.



Continue work with Surfrider to target other types single-use plastic, including straws.



Work with Surfrider to increase public education regarding monofilament recycling boxes located throughout Absecon Island



Sustainable Downbeach

LONGPORT, MARGATE AND VENTNOR WORKING TOGETHER FOR A GREENER ABSECON ISLAND

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Program Underwriters







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Current Annual Sustainable Jersey for Schools Sponsors

Sustainable Jersey for Schools Underwriters









Small Grants Underwriters







Corporate Sponsors









GOLD



SILVER











Q&A

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