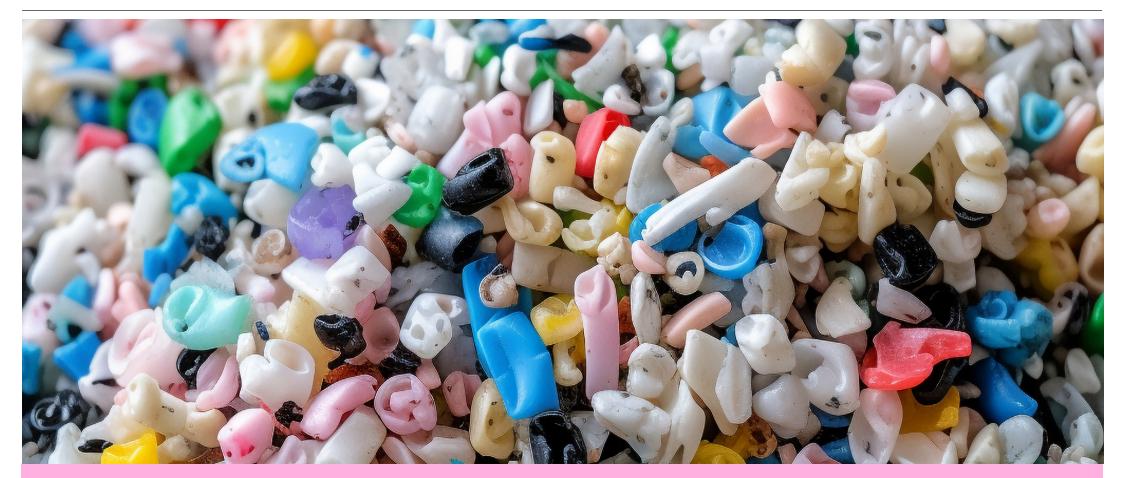
ATLANTIC COUNTY RECYCLES





TACKLING THE TEENY TINY

ACUA Teams Up with Startup Company To Remove Microplastics from Wastewater

It is easy to grasp the harmful impact of discarded plastic that ends up as litter on the roadway or in the ocean. But what about the effects of smaller, less visible plastics that stealthily slip into our environment?

Microplastics, or tiny plastic particles that come from a variety of sources, are becoming a growing environmental concern. They include plastic particles that break off as larger items degrade as well as microbeads used in beauty products. Another source? Fibers that break off clothing made with synthetic materials often used to create inexpensive fast fashion.

Although often undetectable to the naked eye, microplastics can easily accumulate and have been found in both the stomachs of marine animals and the blood stream of human beings.

While research on microplastics is ongoing, the impact of chemicals used to make plastics have been widely studied, and the results are not good. Chemicals used to make plastic have been shown to disrupt reproductive, growth and liver functions in marine life.

Despite this growing concern, there seems to be no simple way to turn off the flow of microplastics.

Finding a Solution

After learning about the prevalence of microplastics, Princeton University grads Nathaniel Banks and Yidian Liu were moved to solve the issue. Using their backgrounds in architecture and product design, they assembled a team to develop an effective way to capture microplastics before they enter the environment.

"Both Nathaniel and I were shocked to learn that, while large plastic pollutants are actively collected and recycled from waterways, little to no systems exist to capture or recycle the trillions of potentially harmful microplastics entering the world's oceans and drinking water each year," said Liu. "We knew we needed to do something about this problem."

Banks and Liu have since created a product to do just that. Their New Jersey based startup, PolyGone, has created a filtering system that could be installed at wastewater treatment facilities to remove microplastics from effluent.

The product has gone through several iterations and was awarded a \$1.9 million grant from Marine Debris Challenge Award from National Oceanic and Atmospheric Administration (NOAA), to improve and implement their technology.

Partnering with the ACUA Wastewater Treatment Facility

Recognizing that wastewater treatment plants are the last form of defense for many harmful contaminants, the Poly-Gone team began seeking a partner treatment facility willing to implement a pilot project. Luckily, the team did not have to go too far to find a partner with the same concern for the environment and forward-thinking approach.

The Atlantic County Utilities Authority (ACUA) welcomed the team and its proposed project. The local environmental authority is no stranger to innovation. It is the first coastal wastewater treatment facility in the country to harness wind energy to power its facility. The plant also runs on solar power and is home to a renewable energy storage battery and a soon-to-be hydrogen project.

...continued inside on page 3

LOCAL ENVIRONMENTAL EVENTS

SEPT

9

Household Hazardous Waste Drop-Off

8 AM to 1 PM

ACUA, 6700 Delilah Road, Egg Harbor Township, NJ Safely dispose of household chemicals and hazardous items at our next drop-off.

See acua.com/hhw for details.

SEPT 18

Garden Talk: Tree and Shrub Care/Pruning

5:30 PM

ACUA Garden, 6700 Delilah Road, Egg Harbor Township, NJ Learn how to care for trees and shrubs in your landscape. We'll talk about when to plant, the best time to prune, and how to give your bushes and trees some TLC.

SEPT 26-27

ACUA Electric Vehicle Lunch and Learn and EV Expo

12 PM on Tuesday, Sept. 26 | 4 to 6 PM on Wednesday, Sept. 27 Zoom and ACUA, 6700 Delilah Road, Egg Harbor Township, NJ Join us to learn more about electric vehicles, incentives and more. See acua.com/driveelectric for details.

0CT 16

Garden Talk: Bulbs and Winter Interest

5:30 PM

ACUA Garden, 6700 Delilah Road, Egg Harbor Township, NJ Floral blooms and impressive foliage don't have to go away in the fall. Your local wild critters will thank you for winter berries, seeds, and

0CT

4H Electronics Recycling Fundraiser

21

Responsibly recycle your electronics to help the Atl. Co. 4H Club! 9 AM to 12 PM David C. Wood 4H Center

3210 Route 50, Mays Landing, NJ ac4hfair.org

NOV 4

Household Hazardous Waste Drop-Off

ACUA, 6700 Delilah Road, Egg Harbor Township, NJ Safely dispose of household chemicals and hazardous items at our next drop-off.

See acua.com/hhw for details.

NOV

18

America Recycles Day

ACUA, 6700 Delilah Road, Egg Harbor Township, NJ

Join us for a free family event all about recycling. Enjoy games, crafts, Touch-a-Truck and more! Rain date is November 19. See acua.com/ard for details.

Want your event to be included in our calendar? Email ar@acua.com

Safely Dispose of Household Hazardous Waste at ACUA on Saturday, September 9



Most Atlantic County residents have hazardous waste in their cabinets, basements, or garages. Cleaning products, motor oils, insecticides, oil-based paints, and rechargeable lithium-ion batteries are just a few hazardous items that cannot be disposed of in regular curbside trash cans. Hazardous waste can pollute waterways and the environment. It can also endanger sanitation workers and cause truck fires.

Residents are encouraged to dispose of these items safely at designated ACUA hazardous waste drop-offs held several times a year. The next drop-off will be Saturday, September 9, 2023, from 8 a.m. to 1 p.m. at the ACUA's Environmental Park, located at 6700 Delilah Road in Egg Harbor Township.

The drop-off is convenient – residents do not even need to exit their vehicle! Residents will need to provide proof of Atlantic County residency such as a driver's license or a tax bill. Participants may bring materials from more than one Atlantic County household, so residents can help a family member or neighbor to save travel time and gas.

Residents are encouraged to visit www.acua. com/hhw for a comprehensive list of accepted items. Items should be placed in a recyclable or disposable container, such as a cardboard box, that can be safely removed from the vehicle and discarded. Containers will not be returned.

ACUA will also be accepting reusable bags at the drop-off event. Residents with extra reusable bags they no longer need can donate them at the event. Bags should be clean, have no tears and no tags. The bags will be delivered to the Community FoodBank of New Jersey's Egg Harbor Township location where reusable bags are needed.

The final drop-off for the year will be held on Saturday, November 4.

For more information, please call (609) 272-6950 or visit the ACUA's website at www.acua.com/hhw.





Our Mission

The Atlantic County Utilities Authority (ACUA) is responsible for enhancing the quality of life through the protection of waters and lands from pollution by providing responsible waste management services. The Authority is an environmental leader and will continue to use new technologies, innovations and employee ideas to provide the highest quality and most cost effective environmental services.

ACUA Officers

Matthew DeNafo, President

Linda Bazemore, Vice President of Administration and Finance/CFO

Gary Conover, Vice President of Solid Waste

Tom Ganard, Chief Engineer

Joseph Pantalone, Vice President of Wastewater

Board of Commissioners

Marvin Embry, Chairman Fred Akers, Vice Chairman Laura Pfrommer, Treasurer Maria K. Mento, Assistant Treasurer Andrew G. Berenato III John E. Lvons Judy M. Ward

Dennis Levinson, County Executive

Contact Us:

609.272.6950 www.acua.com

P.O. Box 996













Microplastics Continued...

"One of ACUA's greatest attributes as an environmental leader is its willingness to explore new ideas and research," said ACUA President Matthew DeNafo. "We welcomed the opportunity to collaborate with PolyGone on this pilot program and do what we can to minimize the harmful effects of microplastics."

ACUA's coastal wastewater treatment facility serves 14 municipalities. The Authority owns more than 60 miles of pipeline and 19 pump stations located throughout Atlantic County that transport wastewater from homes and businesses to the facility. The facility can treat up to 40 million gallons of wastewater per day, but normally treats an average of 29 million gallons per day. Its effluent is released into the Atlantic Ocean, and its biosolids are currently incinerated.

As mentioned, the treatment process is powered through renewable energy generated on-site by the Jersey-Atlantic Wind Farm, which includes five 1.5-megawatt wind turbines, as well as 2,700 solar panels. A state-certified water testing laboratory is also on-site and ensures the facility is meeting all environmental quality standards.

How It Will Work

PolyGone and ACUA have collaborated on a design that will fit into the existing treatment system without causing disruption. PolyGone's floating filter mimics a natural wetland to capture microplastics as water passes through. It will be installed in ACUA's equalization basin, which is the last stop before treated wastewater is sent out to the Atlantic Ocean.

As the filters fill up with microplastic debris, they will be discarded. The microplastics collected from the filters will be collected and ultimately taken to a recycling facility.

To track the success of the project, water samples will be collected and analyzed to measure microplastic debris. The coconut fiber brushes will be extracted, collected, and analyzed in a lab for their microplastic count. Looking through a microscope, a tough, rigid, and crystalline thermoplastic



The image above shows a rendering of the educational pavilion that will provide visitors with a hands-on look at the technology.

fiber would be visible in the coconut fiber sample, which would indicate that the brush successfully captured microplastics from the stream.

The pilot with ACUA will allow PolyGone to further refine its technology. It will be the first of its kind and, if successful, can be replicated at other treatment facilities.

Educating the Public

ACUA's established reach in the community was another reason PolyGone was happy to partner with the Authority. The utility regularly welcomes thousands of visitors each year to its facility for tours to inform the community about its operations.

"Even though wastewater treatment plays an essential role in our daily lives, most people do not even think twice about it when they run the dishwasher at home or flush the toilet," said DeNafo. "We continually work to change that by inviting the public to our facility and through outreach to schools and community organizations."

In addition to helping solve the problem, PolyGone and ACUA will work to educate the community about the technology and the dangers of microplastics by installing an educational pavilion next to the project at the facility. The educational pavilion will allow visitors to witness the pilot in real time and see how it works.

Evolving Wastewater Industry

This pilot showcases the potential that the wastewater industry must grow and evolve with changing public health concerns. During the covid pandemic, for example, many scientists were working with wastewater treatment facilities to source new information about the impact and spread of disease. It was one of the few times that the hidden power of wastewater was brought to the attention of the public.

This microplastics pilot project showcases yet another opportunity for the wastewater industry to embrace partnerships and align itself with innovation. It shows that this often forgotten about essential service can play an even bigger role in achieving a cleaner environment throughout the future.

"This pilot project will bring more attention to the important role wastewater treatment plays in creating clean and healthy communities," said DeNafo.

The pilot program and educational pavilion is expected to be operational in 2024.

"It's an exciting time to be in the wastewater industry."



The project will be installed in ACUA's equalization basin pictured above.

SCHOOL HIGHLIGHTS

Middle School Students Learn About Wastewater Treatment and Earn Statewide Recognition



Assumption students Lillian Harbright (left) and Maggie Festa (right) are pictured with family and faculty.

The Atlantic County Utilities Authority (ACUA) recently teamed up with the New Jersey Water Environment Association (NJWEA) to inform local middle school students about the importance of wastewater treatment.

As President of the South Chapter of NJWEA, ACUA Vice President of Wastewater Joseph Pantalone teamed up with ACUA's Authority Relations and Laboratory staff to provide hands-on and interactive presentations to 7th grade students of Assumption Regional Catholic School in Absecon and William Davies Middle School in Hamilton Township. Students learned about the important and essential role wastewater treatment plays in creating clean and healthy communities.

After the presentation, students were invited to submit essays on the wastewater treatment process and its role in society as part of NJWEA's scholarship contest



Vice President of Wastewater Joseph Pantalone presents to students

Assumption Regional Catholic School students Lillian Harbright and Maggie Festa took home awards for their efforts. Lillian won first place in the South Section (\$200 prize) and was chosen as the runner up in the statewide contest (\$100 prize). Maggie Festa was chosen as the runner up for the South Section (\$50 prize).

Schedule a Field Trip to ACUA



Plan your next school field trip to ACUA! ACUA tours are free, fun and educational. Our team offers a range of environmental programming for all ages.

Tours can be held virtually or in-person at one or both of ACUA's facilities. Tours typically last 1 hour.

At the Wastewater Treatment Facility, students learn how wastewater from area homes and businesses is treated. The treatment process is powered by renewable energy created on-site by the Jersey-Atlantic Wind Farm and solar panels. The treatment process helps keep our local waterways clean and protects wildlife. This visit is great for older students – 3rd grade and up!

Environmental Park: Students of all ages can learn what happens to their trash and recycling after it is collected, enjoy our outdoor playground and receive a visit from our mascot, Supercan.

Visit acua.com/tours to schedule your tour.

Improve Your School's Recycling

ACUA is committed to helping your school's recycling program become a success. We can provide:

Outdoor Recycling Containers + Collection Services

Our single-stream recycling program means all recyclable materials can be placed together in one container, which makes it easy for both students and custodial staff. For many Atlantic County towns, school recycling collection services are free.

Materials, Presentations and Tours

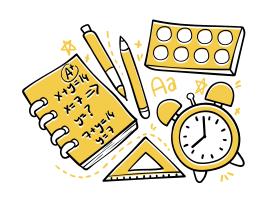
ACUA staff can provide the materials you need to share the message of recycling with your students and faculty. We regularly schedule presentations with local schools throughout the year. Our virtual resources are also accessible at all times.

Waste Audits

Our team can guide a group of students and staff through conducting their own waste audit. We help make it easy to collect real data about the waste your school generates and where it winds up. We provide data collection worksheets, gloves, and other supplies needed.

Contact our Authority Relations Team at ar@acua.com for details.





Adopt a Schoolyard



Adopt a schoolyard and teach students the importance of volunteering, removing litter, and keeping the Earth clean.

Through the Atlantic County Clean Communities Program, ACUA can provide litter grabbers, gloves, safety vests, and other supplies to your school.

Visit acua.com/adoptaroad for details.

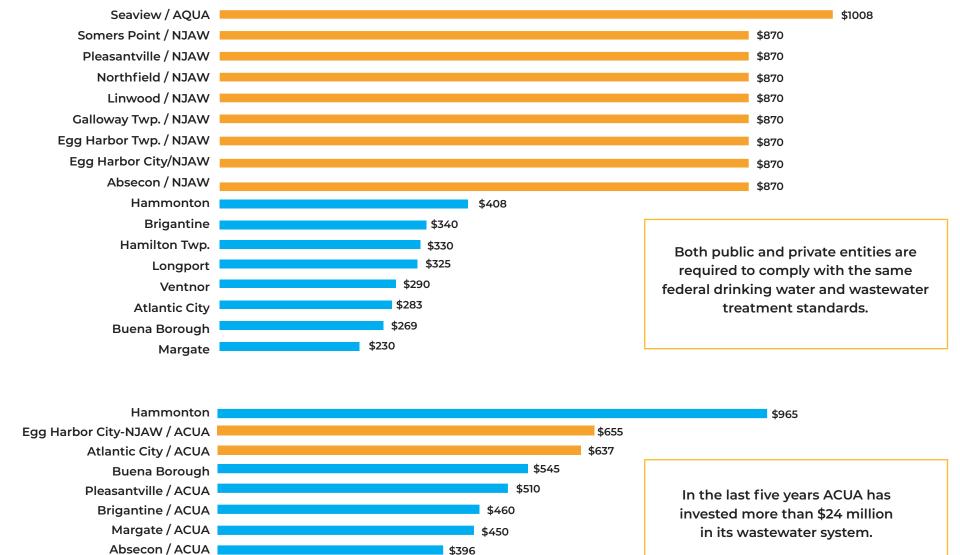
KNOWYOUR RATES

The charts below show 2023 rates for local drinking water as well as sewer and wastewater treatment rates based on 70,000 gallons/year usage.









\$395

Longport / ACUA

Linwood / ACUA \$386 **Private Utility** Somers Point / ACUA \$385 INVESTOR OWNED SYSTEM Galloway Twp. / ACUA \$385 Northfield / ACUA **Public Utility** Seaview/ACUA MUNICIPAL OR COUNTY OWNED SYSTEM Egg Harbor Twp. / ACUA \$350 ACUA - Atlantic County Utilities Authority Wastewater Treatment Plant Customer \$310 Ventnor / ACUA \$294 Hamilton Twp. / ACUA **NJAW** - New Jersey American Water Customer AQUA - AQUA America Customer





STATE OF WASTE

Since 1990, the Atlantic County Utilities Authority's (ACUA) 360-acre Environmental Park in Egg Harbor Township has served residents with an integrated solid waste management system that includes a transfer station, double-lined landfill, recycling center, and composting facility. But waste in our area wasn't always managed this way.

Before the Environmental Park was opened, trash was buried in various dump sites across the county – and these sites were not up to today's environmental standards. Chemicals and leachate generated from the decomposing trash seeped into the ground, posing a major threat to the drinking water.

In the 1980s, environmental regulations were enacted to close these dump sites and prevent them from further polluting our communities. Each county in New Jersey was responsible for creating a regional solid waste management plan to responsibly handle waste moving forward. ACUA was designated as the organization to handle the material for Atlantic County.

Today, our site accepts more than 1,000 tons of waste every day from area communities and businesses. The site was specifically selected and designed to accommodate the many trucks and tons of trash entering the facility each day. The lined landfill prevents groundwater contamination, and our collection system captures gases created from decaying waste.



TRASH FACTS



Because we neighbor the Atlantic City Airport, ACUA places trash in the landfill at night to keep birds away from the area. Waste taken to the facility during the day is stored in the transfer station, and our night shift team buries the trash in the landfill before daylight.



New Jersey is home to the most Superfund sites in the country – many of which were toxic dump sites before improved regulations were put into place.



South Jersey Gas will soon be turning the gas captured from the landfill into natural gas that can be used to power area homes and businesses.



Yard waste like limbs, grass and tree stumps is composted into ACUA's EcoSoil product on site.

LEARN MORE Interesting Books and Podcast Episodes on Waste:

- NJ Spotlight Hazard NJ: The Resurrection of Price's Pit
- · The Toms River Story by Dan Fagin
- NPR Planet Money: A Mob Boss, A Garbage Boat and Why We Recycle
- The Pine Barrens by John McPhee
- Waste by Tristram Stuart
- · Rubbish! The Archaeology of Garbage by William Rathje



TYPE 13C - Construction and Demolition Waste

This is waste created during construction or remodeling projects, such as carpeting and roofing materials.



WHAT IS WASTE FLOW?

CUMBERLAND

Waste flow means that waste in these counties must be directed to a designated disposal facility. In Atlantic County, the designated facility is the ACUA Environmental Park in Egg Harbor Township. Waste flow supports integrated waste management and recycling systems. It ensures there is a safe location to dispose of solid waste responsibly. Waste flow also helps stabilize rates for towns and residents.

| Mercer | \$99.45 - \$110 |
|------------|-------------------|
| Hudson | \$109.85 |
| Morris | \$107.5 |
| Sussex | \$96 |
| Warren | \$96 |
| Burlington | \$95.04 |
| Hunterdon | \$88 |
| Monmouth | \$85.60 |
| Camden | \$84 - \$89.93 |
| Gloucester | \$83.64 - \$84.64 |
| Salem | \$83 |
| Bergen | \$82.45 |
| Ocean | \$81.96 |
| Cape May | \$81.56 |
| Cumberland | \$79.50 |
| Middlesex | \$76.50 |
| Atlantic | \$76.35 - \$82.87 |

Counties with Waste Flow

Essex

\$74.30 - \$84.14

NATIONAL DRIVE ELECTRIC WEEK EVENTS



VIRTUAL LUNCH AND LEARN

Tuesday, September 26, 2023 12 PM | Zoom Meeting

Hear from experts and state representatives about the latest technologies and incentives for making the switch to driving an electric vehicle.

IN-PERSON EV EXPO

Wednesday, September 27, 2023
4 to 6 PM | ACUA Environmental Park
6700 Delilah Road, EHT

Come to ACUA's Environmental Park to see a variety of electric vehicles, motorcycles, and bicycles on display. Talk with dealers and drivers about driving electric or display your EV and exchange knowledge!



Register for one or both events at

ACUA.COM/DRIVEELECTRIC



Donate Your Extra Reusable Bags



ACUA Solid Waste Director Greg Seher delivers donations to the Community FoodBank of New Jersey, Southern Branch.

The Atlantic County Utilities Authority (ACUA), in partnership with the NJ Clean Communities Program and the NJ Food Council, is accepting reusable bags for donation for those in need.

Donations can be dropped off at ACUA's GEO Administrative Building located at 6700 Delilah Road in Egg Harbor Township, Monday through Friday, from 8:30 a.m. to 4:30 p.m. ACUA will also be accepting bags at its next Household Hazardous Waste Drop-Off on Saturday, September 9.

ACUA has collected, cleaned, and delivered a total of 1,047 donated reusable bags to the Community FoodBank of New Jersey in Egg Harbor Township and Angels in Motion in Atlantic City.

The program is part of a pilot created through the NJ Clean Communities Program and NJ Food Council to address

those in need and provide an outlet for those with an abundance of bags. The organizations are funding the sanitization of bags prior to donation. NJ Clean Communities and the NJ Food Council were responsible for implementing NJ's Bag Ban when it went into effect in 2022.



Nicole Hyde of Angels in Motion receives reusable bag donations.



Have experience behind, or under, the wheel?

We're hiring Drivers, Mechanics and more!

Competitive Health Insurance Program • Paid Vacation

Public Employees Retirement System Membership (Pension)

Dental, Vision and Prescription Drug Plans • Paid Holidays

CDL Bonus • Sick Leave • On-Site CDL Training

APPLY AT ACUA.COM/CAREERS

RECYCLING REMINDERS



Put these items into your curbside recycling bin:



PLASTICS

#1, 2, 5 Bottles, Jugs, and Containers





PAPER & CARDBOARD

Please flatten cardboard boxes



GLASSBottles and Jars



METAL

Aluminum, Tin and Steel Cans

DO NOT Bag Items! Place all items loose in your recycling bin.



CONTAINER OPTIONS

BUCKETS: Many Atlantic County homeowners are entitled to one free 20-gallon recycling bucket every four calendar years. Call 609.272.6950 to see if you are eligible.

CARTS: ACUA sells large 96-gallon carts for \$80. These can be delivered to your home in Atlantic County within two weeks. Place an order online at acua.com or over the phone.

NEVER FORGET YOUR RECYCLING DAY!

Sign up to receive a free text, phone call or email the night before your ACUA collection. Just visit acua.com/reminders, search for your address, and select the option to "Get a Reminder."



RECYCLED ART ART COUNTY LIDDADY CVETEN

Students and artists of all ages are invited to participate in our annual recycled art contest!





Artwork must be made from recyclable or trash materials. Entries will be accepted at Atlantic County Library Branches throughout the month of October. Winners will be selected and awarded during ACUA's America Recycles Day Celebration on Saturday, November 18, 2023.

See full guidelines at acua.com/artcontest



Can I Recycle Books?

We recommend locating a home for old books before tossing them in the bin. Paperback books are accepted in your curbside recycling cart. Hardback books are **not** accepted.



Atlantic County Clean Communities Program

Local Groups Clean Adopted Roads, Schoolyards and More!











Hammonton Green Committee

Sustainable Mullica

Ford Beautification Project

Marriott Fairway Villas

Zion Lutheran Church











Aktion Club

Delta Sigma Theta Sorority, Inc.

Hammonton Democratic Club

Moms Club of Absecon

Village Medical















Team Reustle, In Memory of Slim



Mullica River Cottage









Egg Harbor City Community Cleanup

JOIN THE EFFORT!

Help keep our community clean! You can safely remove litter from roadsides, parks or school yards with our assistance.

LEARN MORE! acua.com/adoptaroad



JOIN OUR FACEBOOK GROUP!

facebook.com/groups/acoblitteraters

Participate in the Fall Litter Challenge

ACUA and the Atlantic County Clean Communities Program invite you to participate in a litter removal contest throughout the month of October for a chance to win!



HOW TO PARTICIPATE

Litter teams can perform cleanups between October 1-14 on roadways, parks, or other public areas. Each team must report bags of trash or recycling collected through a designated online form. Pictures of material must be sent to verify the cleanups. The winner will be selected based on the amount of litter collected and announced in November.

Contest is open to Atlantic County residents. Teams are limited to 15 people or less.

PRIZES

First Place - \$500 Mini-Grant Second Place - \$300 Mini-Grant Third Place - \$100 Mini-Grant Strangest Litter Find - \$100 Mini-Grant

To view the full contest rules and to register, visit:

acua.com/litterchallenge



Blue Heron Pines took home the first place prize in 2022.

ACUA Donates 117 Yards of EcoSoil to Local Gardens

Each year, the ACUA donates many yards of its EcoSoil product made from composted yard waste to area churches, schools and nonprofits to grow bountiful community gardens.



Buena Boro Community Center



Mullica Township School Garden

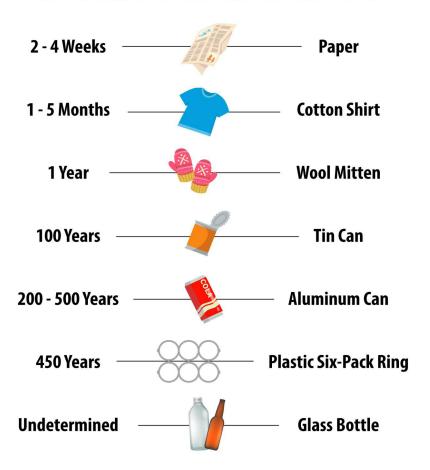


GREEN TEAM SPOTLIGHT

Brigantine Green Team Installs Pollinator Photo Op

The Brigantine Green Team recently installed a mural to bring attention to the important role of pollinators. The mural provides a photo opportunity and invites the community to learn about butterflies. The mural is located on West Brigantine Avenue and 13th Street South and will soon be partnered with a pollinator garden and educational signage.

TIME TABLE FOR LITTER DECOMPOSITION



Atlantic County Adopt-A-Road Litter Removal Stats

From January to June 2023:

190

356

cleanups performed

bags of recycling removed

511

230

bags of trash removed

miles of roadway cleaned

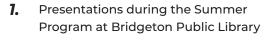
The 2022 Beach Sweeps, an annual statewide cleanup of NJ Beaches, recorded a 37% decrease in plastic bags collected compared to 2021, which is attributed to the state's ban on bags.

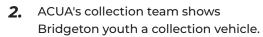
ACUA In Your Community











- **3.** Buena Vista Township Car Show
- 4. Trenton Climate Corps Tour
- Bellhaven and Seaview School Tour







- **9.** Ventnor National Night Out
- 10. Millville National Night Out
- **77.** Egg Harbor Township National Night Out
- **72.** Buena Vista Township National Night Out
- **13.** Everest Gymnastics Summer Camp in Mays Landing
- **74.** KidWind 2023 REcharge Academy Tour
- 15. Alder Avenue School Tour















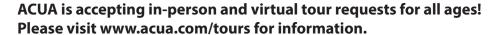












www.acua.com | 609.272.6950

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