ANJEC REPORT

Local Environment Matters

SPRING 2024

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Director's Report

Energizing the future

Creating a future fueled by clean energy is one of the most important actions we can undertake. Transitioning away from fossil fuels and building a Garden State powered by renewable energy both combats the climate crisis and reduces air pollution.

New Jersey is acutely experiencing the impacts of the climate crisis with more frequent and intense flooding, warmer winters and more extreme summer temperatures. We need to become more resilient to the impacts of climate change while reducing greenhouse gas emissions (GHG) as much and as fast as possible.

Reducing GHG emissions has the benefit of improving air quality. Black, brown, indigenous and low-income communities often breathe air that is more polluted than in other areas. Transitioning to clean, renewable energy is fundamental to creating a more just and equitable New Jersey.

Greening the energy grid also transforms our transportation sector as we transition to electric vehicles (EVs). New Jersey's grid is already the cleanest in the nation, making EVs a hands-down winner compared to combustion engine vehicles. However, transportation still accounts for nearly 40 percent of GHGs in our State.

Along with energy production and transportation, energy use in buildings is among the major factors affecting GHG pollution in NJ. The places where we live and work need to become more energy efficient, with better insulation to conserve heat and air conditioning.

ANJEC is working at both the state and local level to reduce GHG emissions while we continue to support environmental commissions with enhancing resiliency.

A shared vision for the future

ANJEC is a proud contributor to the Common Agenda for the Environment, developed by the New Jersey League of Conservation Voters (NJLCV) along with a diverse cross-section of conservation leaders The Common Agenda reflects policy priorities shared across NJ's environmental community for 2024-2025, including:

- **Securing a 100 percent clean energy future.** We will work with partners to finish the work begun in the last legislative session to codify into law Governor Murphy's commitment to 100 percent clean energy by 2035, putting our State at the forefront in the fight against climate change while creating union jobs. We support investments to build a 21st century electricity grid and will also prioritize environmental justice concerns to ensure that any final legislation is truly green.
- **Preserving parks and other open spaces.** We will advocate to defend open space from sprawl for all New Jerseyans, no matter their ZIP code, to have access to parks and for commonsense measures to fight warehouse sprawl.
- **Reducing transportation pollution.** The transportation sector is a major contributor to climate change and we are calling for strong action to strengthen NJ Transit while also reducing the climate and air quality impact of vehicles.

- **Safeguarding clean drinking water.** While New Jersey has been a national leader in addressing PFAS and microplastics in drinking water, we need continued study to ensure that proper protections are put in place to protect the health and safety of our State's residents, even as we push for additional investments to upgrade our aging water, sewer and stormwater infrastructure.
- **Enhancing voting rights.** New Jersey currently lags in voter participation, which is why we must work to remove barriers to the ballot box while expanding fundamental voting rights and access by addressing long lines at the polls on Election Day and struggles with accessibility at polling locations.

Jennifer M. Coffey (she/her)
Executive Director

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564 MUNICIPALITIES ..... ONE ENVIRONMENT

Executive Director ..... Jennifer M. Coffey
Editor ..... Julie Lange Groth

The mission of ANJEC is to promote local action to protect and restore New Jersey's natural resources and to ensure healthy communities for today and the future. ANJEC advances its mission by engaging in equitable and inclusive practices through leadership, partnerships, education, advocacy for strong public policy, and in support of environmental commissions, public officials, and communities throughout New Jersey.

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In this issue:

On the cover: ***The eastern towhee is commonly seen in brushy areas around NJ.*** Photo by Blaine Rothauser

Implementing a stormwater utility

An interview with Lambertville Mayor Andrew Nowick

By **Sheila Baker Gujral**, ANJEC Resource Center Director

What first piqued your interest in starting a stormwater utility?

Early in my candidacy for Mayor I began to examine the City's past efforts at flood mitigation and stormwater management. I learned that New Jersey adopted a stormwater utility law in 2019. I read up on the law and had conversations with the chairperson of the Lambertville Environmental Commission who offered further contacts at NJ Future and the NJ League of Conservation Voters. The more I learned about the effectiveness and equitable advantages of stormwater utilities in municipalities across the US, the more I asked myself if this would be right for Lambertville.

What challenges are you trying to address with a stormwater utility and how do you think it will help?

The challenges of stormwater management in Lambertville are many and overlapping and may best be examined through the lens of the MS4 Tier A permit to which the City has recently been assigned. In addition to our former requirement under the MS4 Tier B permit, the City must now comply with 34 new or modified regulations. For a small municipality with constrained resources, the breadth of these regulations is daunting and, without a disciplined approach to ensuring the necessary resources are in place, we will fail to meet the requirements. Failure will not happen in my mayorship, though some days it seems our little City is a test case in the struggles posed by climate change. My goal is not just to manage the rainfall totals of yesterday, but to prepare Lambertville for the rainfall totals of 2055.

Having now personally mapped almost all of 540 plus inlets and outfalls, I see a conveyance system of great variability in terms of age, capacity and structural integrity. We have small, 19th century stone box culverts emptying into concrete culverts six feet high. We have large outfalls emptying onto steep wooded slopes, creating gullies ten feet deep. There is a seven-foot-high Department of Transportation culvert that gets choked with debris at both the intake and the outfall; the outfall empties into a deep tributary and needs to be cleared by a crew in a boat. There are cross jurisdictional challenges with state, county and neighboring municipal systems that flow into our creeks and under our streets and parks. A mile of steep wooded slopes on our eastern border sends stormwater debris rapidly downtown, covering our inlets and causing localized flooding.

A stormwater utility will oversee the many elements of routine management while identifying and funding future capital needs. And it will do so equitably; the more impervious surface a property has, the greater its share in addressing growing environmental, social, economic and regulatory needs. Rates will be adjusted for reducing impervious surfaces through green infrastructure, bioswales, rain gardens, permeable pavement, etc.

Lambertville Mayor Andrew Nowick

When did you start and where are you now in the process?

In early 2023, the City applied to both the NJ Department of Environmental Protection and the NJ League of Conservation Voters (NJLCV) for grant funding and technical support to undertake a stormwater utility feasibility study. The City was awarded grants from both and chose to accept the NJLCV grant. Currently, we are working with consulting firms Princeton Hydro and WSP to conduct the study. Because of the substantial nature of this endeavor, my goal is to bring the question directly to the voters of Lambertville via a referendum in November 2024. While stormwater utilities may be enacted directly by local municipal governments, Lambertville has a strong history of putting major initiatives directly to the voters and I feel that a well-informed community can and should assume responsibility for self-incurred costs.

What kind of outreach/education are you doing? What has been the response?

My weekly newsletter allows me to reach 2,500 individuals. Also, as part of the study, we will hold three focus group meetings, each composed of a cross section of stakeholders – homeowners from across the City, business owners, churches, local engineers, etc. In addition, there will be two public meetings with the City Council as well as other public meetings yet to be scheduled. If the Council votes to adopt the required ordinance in June allowing for the referendum, there will be door-to-door outreach over the course of the summer.

Should the question go to referendum and should the voters favor the enactment of a stormwater utility, the City Council will be responsible for establishing rates and getting it up and running.

More information

- NJ Future Stormwater Utilities Resource Center: *https://stormwaterutilities.njfuture.org/*
- NJ Spotlight News: "Could stormwater utility spare town from future floods?" *http://tinyurl.com/43x28ffv*
- New Hope Free Press: "Lambertville Councilmembers Hear Stormwater Utility Presentation" *http://tinyurl.com/mp7prh4v*

By **Michele Gaynor**, ANJEC Resource Center;
Paula Uhland, Hainesport Environmental Commission;
and **N. Dini Checko**, ANJEC Project Director

Saving Puddingstone Ridge

Puddingstone Ridge, a residential community in Parsippany, was built in the 1960s with the intention of preserving the natural aesthetics and beauty of the setting and maintaining mature trees rather than clearing and destroying the natural habitat. The original developer sought to maintain the diversity and ecological importance of the mountaintop ridge that made the community so special and attracted people from all over to live in such a peaceful setting. The Ridge is also one of the highest points in NJ with an abundance of deer, fox, turkey and a huge diversity of birds.

"The Ridge is home to other endangered and protected species, as well as being within a 10-mile radius of a hibernaculum and foraging buffer for the endangered Indiana bat and a summer habitat for the northern long-eared bat," according to Parsippany resident Jes Becker.

When another developer purchased land on Puddingstone Ridge, additional lots were approved for houses and roads were opened to allow for more building. That's when things began to get ugly. Construction disturbed the bucolic nature of the Ridge with noise, dangerous traffic and pollution from truck exhaust all day long. The developer deemed clear cutting 300 to 400 mature trees on multiple lots more cost effective than attempting to save most and build around them. Besides the tree destruction, the applicant sought a variance to push the homes back dangerously close to the steep slopes of the Ridge. The variance request was to disturb slopes that are five times the steepness limit allowed by town ordinance.

The quality of life on the Ridge was threatened and residents were distraught, but the community rallied. They hired an attorney and brought in local experts to

Drone photo of the Ridge by Guy and Erin Lehman

testify about the importance of maintaining the integrity of this natural landscape.

Becker said residents of Puddingstone Heights formed an Action Team and dedicated themselves to the movement that became known locally as #SaveTheRidge. Team members spent countless hours fighting to save the environmentally sensitive land on the Ridge that is home to many wetland areas, including a vernal pool and a freshwater reservoir, transition areas, and tributaries of the nearby Whippany River. The Action Team was successful in protecting the wetlands and mature forest by consulting with various environmental groups and experts from ANJEC, the NJ Highlands Coalition and the NJ Department of Environmental Protection.

Becker and other team members Lucinda Crain and Jenn Apito focused on environmental concerns. Becker and Crain made numerous field visits to the wetland areas and mature forested areas on adjacent properties to prove that protecting the land was vital to the survival of all the inhabitants on the Ridge and surrounding areas.

When asked what makes saving the Ridge so important, Becker explained: "A fellow advocate reminded me that we must uphold the creed of Puddingstone. An area of what was once considered a creation of man and a continuance of nature in a densely wooded area on Puddingstone Ridge has now been devastated and destroyed. We owe it to our children and their children and the future of our world to protect the environment and uphold the creed of Puddingstone."

With their unwavering commitment to protecting the Ridge, the Action Team and their supporters were able to successfully convey to the Township and Zoning Board of Adjustment why the destruction and overdevelopment of the Ridge should be avoided. *– Michele Gaynor*

Big Rusty by Guy Hessel

A giant troll lives in Hainesport

Last summer, Thomas Dambo, a well-known Danish artist, created a gigantic, one-of-a-kind sculpture called Big Rusty on the site of an old pottery factory in Hainesport. Made of recycled parts from the demolition of buildings there, the whimsical 20-foot-tall troll seems to enjoy eating bits from the remaining buildings.

Hainesport purchased the 24-acre property, known as Creek Turn Pottery, in 2017 from the Kleiner family using mostly open space funds. Located on the south branch of the Rancocas Creek, it overlooks a sharp turn in the creek going south towards Lumberton with excellent views of the water from a line of high embankments with ancient beech trees and other unique native plants.

The first people to inhabit this site were the Lenapehoking Indians. Their village, called Sandhickney, was a short walk or a canoe ride downstream at the confluence of the north and south branches of Rancocas Creek. It is located in what is now Rancocas State Park in Hainesport, just north of Rancocas Woods, where indigenous people lived in peace until the late 1700s.

The Kleiner family purchased the Creek Turn property in the 1930s, built a home there with fabulous views of the creek, and began making unique, colorful plates and bowls, expanding into a full-scale operation over the years. The debris from several of the

demolished outbuildings found a new life when Mr. Dambo and his crew arrived last year.

Born in Copenhagen, Denmark, young Tom Dambo enjoyed the support of his parents as he created toys out of recycled materials. With time, his projects became larger. He started making troll-like figures for local parks and summer festivals and became well known in Denmark and beyond. So far, he has created over 100 sculptures from recycled materials around the world and plans to install at least 50 more in the US this year.

Combining the fantasy of stories about trolls and teaching us and our young ones about how there is a second life for many of the things we throw away today, Mr. Dambo has created a magical universe of monster-sized creatures to delight us and to send a hopeful message about our planet and our future.

"In nature, there is no landfill. Nature is circular; everything has a meaning and everything is recycled," says Dambo.

Note:
Coordinated by the Sylk Family of Hainesport, funded by a generous donation from the Bluewater Property Group and supported by the Hainesport Township Environmental Commission, Big Rusty is located at 1404 Route 38 East in Hainesport, NJ. Also see *Thomas Dambo.com* *– Paula Uhland*

Artificial turf goes to the ballot box

To turf or not to turf continues to be a hot topic across the State. Artificial turf wars heated up in last November's election in Scotch Plains and Westfield where ballot questions centered on municipal spending for synthetic turf. The residents responded with an overwhelming NO.

Scotch Plains voters were asked to decide on a bond ordinance authorizing the Township Council to appropriate $3.8 million to finance improvements to Brookside Park, most of which was intended for installation of artificial turf on a baseball field. In Westfield, voters were asked to authorize $11.8 million to fund the Edison School multipurpose fields project, which included installation of synthetic-turf multipurpose athletic fields, drainage and site improvements, field lights, amenities and construction of bathrooms.

Westfield's drive to get a ballot measure and educate residents came from knowledgeable and organized citizens groups whose members included the town's green team. Westfield's Citizens Responsible for Athletic Field Development was focused on getting the vote out via a strong educational campaign. In Scotch Plains, it's the Friends of Brookside Park, a grassroots group of residents, who are committed to preserving the Park as a multi-purpose green space with natural grass.

In January, Cape May City announced interest in passing an ordinance that would exclude the use of artificial turf in the community except in limited circumstances. A subcommittee comprised of members of the Planning and Zoning Board and the Environmental Commission has been working on the ordinance language. As of the time of this publication, the ordinance has not yet been introduced.

Sierra Club NJ has prioritized artificial turf as a signature issue for 2024 over land use, toxins, microplastics and environmental justice concerns. If you're interested in joining this coalition of individuals and organizations, please connect with *Taylor.Mcfarland@sierraclub.org*. For an in-depth look at environmental and health issues surrounding synthetic turf, please read the article entitled "To Turf or Not To Turf," in the Winter 2023 *ANJEC Report* at *http://tinyurl.com/yc8dpxa8.*

More information
- Friends of Brookside Park – *https://friendsofbrooksideparksp.org*
- Citizens for Responsible Athletic Field Development – *www.westfieldcrafd.org/*
- My Central Jersey: "Scotch Plains, Westfield voters reject turf field projects" – *http://tinyurl.com/29t4x7tb* *– N. Dini Checko*

Summit's tiny forest

By **N. Dini Checko**, ANJEC Resource Center

The Summit Environmental Commission (SEC) was inspired by the success of growing forests using a method of ecological engineering called the Miyawaki Method. Developed by Dr. Akira Miyawaki of Japan, the approach uses native trees, shrubs and bushes that are planted densely in a specific manner to restore degraded land.

Starting in May 2021, the SEC took on this exciting project with a dream of creating one of NJ's very first multilayered micro-forests on about a quarter acre of land using native plants that could become self-sustaining after two to three years and a fully developed forest in 20 to 30 years. Nearly three years later, Summit's "tiny forest" is a resounding success with 90 percent of the initial 650 plantings surviving. For example, the original sumac trees were just bare roots, but in the last couple of years have reached 12 to 14 feet tall.

Under the passionate and enthusiastic leadership of SEC Chair Donna Goggin Patel, the 11,000 square feet of tiny forest in this suburban town is not only supporting biodiversity, carbon capture and stormwater infiltration but also igniting and inspiring more projects. For example, part of the forest is being used to create an indigenous medicine garden, students from Kean University are studying soil rings, and bird songs are being recorded to monitor the birds that visit the tiny forest now compared to when the forest becomes mature.

It takes a village

Patel shared that the project involved an army of volunteers, sweat equity, municipal staff, community partners and generous grants. It started with a $10,000 grant from NJ American Water and $3,000 grant from the Summit Conservancy to purchase deer fencing, native plants and trees, biochar, topsoil and equipment.

Summit's tiny forest

The SEC received an ANJEC Achievement Award in 2022 for being an environmental and cultural resource to the community. In keeping with its priority goal of education and outreach, the SEC co-sponsors native plant sales for residents and holds presentations at the public library with experts such as Dr. Doug Tallamy, professor of Entomology at University of Delaware and author of Nature's Best Hope.

Patel encourages visitors to this special place located in a grassy meadow behind the Summit Community Center. Other municipalities in Union County, Groundwork Elizabeth, and about a dozen environmental commissions have already toured this micro-forest to share advice and learn how to build their own.

Patel offered the following advice to environmental commissioners: "Find an appropriate site that's accessible and visible and keep the deer out. Although it takes a lot of effort and time, it's exciting, worthwhile and leaves you with a great sense of accomplishment!" To learn more, please email *summit.nj.ec@gmail.com*

NJ leading the charge in EV battery management

By **Hana Katz**, ANJEC Program and Policy Associate

New Jersey lawmakers made a major advancement in energy policy in January by enacting the *Electric and Hybrid Vehicle Battery Management Act* (S251) sponsored by Senator Bob Smith. This legislation is the first of its kind in the US to guide the responsible management and disposal of electric and hybrid vehicle batteries. Electric vehicles (EVs) are becoming increasingly popular in NJ as, with growing awareness of environmental issues, residents are choosing cleaner and more sustainable transportation options. EVs reduce greenhouse gas emissions and air pollutants compared with traditional internal combustion engine vehicles and they provide enhanced overall efficiency. However, with increasing EV adoption, the potential environmental impact of EV batteries remains a concern.

EV batteries often contain toxic materials, including heavy metals such as lithium, cobalt and nickel, which are crucial for battery performance but also pose health risks when not disposed of properly. Like all batteries without proper disposal, EV batteries have the potential to contaminate soil and water sources. The leaching of toxic materials occurs over time as batteries degrade or are damaged and the protective casings break down. Exposure to environmental factors can accelerate this breakdown process, especially when exposed to outdoor moisture and temperature variations.

To minimize environmental impact, specialized E-waste facilities handle hazardous substances and ensure the proper disposal of EV batteries. Local recycling centers or waste management authorities can provide details on your municipality's disposal options.

New producer responsibilities

With the new legislation, the State will now mandate detailed battery management plans from producers to address the imminent end-of-life phase of the first generation of EV batteries. This requirement represents a paradigm shift towards a circular economy, covering the entire lifecycle of lithium-ion propulsion batteries, integrating considerations of environmental impact, cost reduction through material reuse, and job growth in their disposal.

- By January 8, 2025, producers must register with the NJ Department of Environmental Protection (DEP),

New NJ legislation will mandate detailed battery management plans from producers to address the imminent end-of-life phase of the first generation of EV batteries.

creating a foundational database for responsible battery management stakeholders. This step ensures a comprehensive record of entities committed to sustainable battery practices.
- Starting January 8, 2026, producers are obliged to annually report to the DEP on the number of covered batteries sold to monitor battery distribution.
- From January 1, 2027, all covered batteries sold in New Jersey must have a permanent consumer information label to promote responsible disposal practices. Producers must provide consumers with educational materials on the approved battery management plan, available collection services and end-of-life management options.
- By January 8, 2027, battery collection and disposal restrictions take effect, addressing the critical issue of unauthorized disposal and reuse. The DEP has authority to inspect recycling centers, vehicle recyclers and propulsion battery producers for compliance.
- Lastly, any violation of the bill's provisions would be considered a breach of the *Solid Waste Management Act*, with potential penalties of up to $50,000 per violation.

From collection and transportation to remanufacturing, reuse, recycling, and proper disposal, the *Electric and Hybrid Vehicle Battery Management Act* establishes a much-needed systematic protocol, positioning New Jersey as a national leader for environmental responsibility and sustainable energy practices. The State's proactive stance in addressing the entire lifecycle of EV batteries serves as a model for other states to shape a standardized approach to responsible EV battery management.

COLLEGE STUDENTS!

Apply for ANJEC's 2024 Lechner Scholarship

ANJEC will award a $1,200 scholarship to a New Jersey college student entering his/her junior or senior year. The scholarship is granted to encourage qualified students to pursue a career in a field related to environmental protection. The Lechner Scholarship Fund is a living memorial to Hermia Lechner, in recognition of her many years of dedicated service and contributions to the preservation of open space and natural resources in New Jersey.

Scholarship eligibility requirements

- New Jersey resident
- Attend an accredited New Jersey four-year college or university
- Entering junior or senior year in the fall of 2024
- Majoring in natural resources, parks and recreation, environmental law, environmental sciences or a related field
- Cumulative grade point average of 3.0 or higher
- Demonstrated activism in the preservation of New Jersey's open space, wildlife or water resources

2024 Lechner Scholarship Application (ANJEC)

SCAN HERE, or go online to:
https://forms.gle/wdDghoCcekPFny2KA

Application deadline: April 30, 2024

- Scan the QR code or type the link into your browser to complete the application. Please remember to submit the required documents noted on the Google form.
- The scholarship will be awarded by May 31, 2024. The winner will be honored at ANJEC's annual Environmental Congress on Sept. 27, 2024.
- Questions? Contact Georgia Madiba, ANJEC Membership Manager, at *gmadiba@anjec.org*

Offshore wind has a bright future in New Jersey

By **Ed Potosnak**, Executive Director,
New Jersey League of Conservation Voters

We were shocked and deeply disappointed when Orsted announced last year that it was pulling out of its two major clean energy wind projects off the New Jersey coast. These projects would have accelerated our transition to clean, renewable energy, helped improve our air quality, and created good-paying local union jobs for thousands of skilled New Jerseyans.

Yet it's important to put Orsted's announcement in perspective. We can't let problems experienced by a single developer blind us to the fact that a robust offshore wind industry is good for the health and environment of all residents (especially communities of color that have been overburdened with air pollution), good for coastal communities already suffering from the impacts of climate change, and good for the communities that will see union jobs and economic growth come to our State.

In January, with Orsted's withdrawal in the rearview mirror, the NJ Board of Public Utilities (BPU) approved contracts for two important new offshore wind farms. Combined with those already approved by the State, New Jersey is still on course to add enough power for over 2.5 million homes in the next seven years. The two new projects by Attentive

Energy and Leading Light Wind are expected to come online in 2031 and 2032 and will provide enough combined energy to power over 2,742 megawatts of clean, renewable energy.

Wind energy company Atlantic Shores remains committed to establishing a thriving domestic offshore wind industry in NJ. This project alone will power more than 700,000 NJ homes, generate nearly $2 billion of economic activity and create thousands of jobs in NJ's thriving clean energy economy.

NJ open for wind business

New Jersey is attracting world class investments to clean up our air and position the State as a nation-leading offshore wind hub. In the fall of 2021, ground broke on the $250 million, 200-acre New Jersey Wind Port in Salem County, which is projected to create approximately 1,500 permanent jobs and generate $500 million annually in economic activity. That's in addition to the planned offshore wind manufacturing operation in Paulsboro.[1]

As with any new industry, we are prepared for more bumps in the road as we launch this important new clean energy industry. While offshore wind has long been established in other places in the world, like Europe, it's an almost entirely new phenomenon in the USA. Any new industry – particularly one that employs tens of thousands of people and involves global supply chains – will run into a few issues along the way. Despite the obstacles solar energy faced, NJ today is a national leader in solar energy generation. We believe the same is true for offshore wind.

We must not let the opportunity to create a robust offshore wind industry pass us by and succumb to the naysayers who continue to gamble with our health and economic future by supporting the fossil fuel industry. New Jersey is blessed with some of the world's best locations for offshore wind. Our gently sloping continental shelf, steady wind currents and proximity to major population centers make the Jersey Shore the envy of the world.

Thanks to the strong commitment of Governor Murphy and the BPU to reduce air pollution, improve public health, energy independence and local job creation, NJ continues to lead our nation's growing offshore wind industry. The new projects don't just demonstrate continued strong interest from the private sector in wind off the Jersey coast; they also represent a down payment in the fight against climate change and cleaning up our air, improving public health, and creating thousands of local union jobs that will strengthen New Jersey's economy.

I am also grateful to the independent scientists for their research. We know one of the greatest threats to our oceans and marine ecosystems is climate change. With rising ocean temperatures, fish and higher species are changing migration patterns and ranges, coral reefs around the world are bleaching and dying, and whole ecosystems are collapsing. To protect our marine life, we must address climate change, and offshore wind is an important tool to protect wildlife.

New Jersey LCV is the statewide political voice for the environment and works to elect environmentally responsible candidates to State and local offices. Along with our partners, we will not be distracted by Big Oil bankrolling misinformation campaigns. We will continue to follow the science and maintain momentum towards a 21st century clean energy economy that will improve air quality, slow the warming of our oceans and create good local jobs – all while actually protecting the Jersey Shore.

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[1] *http://tinyurl.com/49b47tj6*

Hydrogen energy could help fuel a cleaner future

By **Helaine Barr**, Bureau Chief, Climate Change and Clean Energy, NJ Department of Environmental Protection

Hydrogen is the most abundant element in the universe, fueling the nuclear fusion at the heart of our sun. Here on Earth, hydrogen may soon help to fuel something else – New Jersey's greenhouse gas reduction goals. Emergent hydrogen technology may be a means of decarbonizing multiple economic sectors.

As the lightest molecule, composed of only two hydrogen atoms, hydrogen gas can store, move and deliver energy produced from other sources as a powerful form of fuel. Because of its unique properties, hydrogen has the ability to slash emissions and accelerate the growth of the clean energy economy. Hydrogen technology could decarbonize multiple economic sectors, including heavy-duty transportation, industrial manufacturing and electricity generation. Beyond greenhouse gas reduction, hydrogen systems also have the potential to improve air quality – particularly in the State's overburdened communities – and create new jobs, paving the way for a just transition.[1,2]

Hydrogen can be formed in many ways, including electrolysis, steam methane reforming and biologic processes. The United States produces about 10 million metric tons of hydrogen each year, according to the Office of Clean Energy Demonstrations.[3] However, not all methods of production are considered "green." When the energy used to generate hydrogen is derived from fossil fuels, such as natural gas or coal, the emissions from combustion become a part of the lifecycle of that hydrogen. Even "blue hydrogen," which uses carbon capture and storage to draw in carbon emitted by steam reformation, cannot recover 100 percent of emissions. These processes can exacerbate greenhouse gas emissions by releasing carbon dioxide, carbon monoxide and other combustion products.

Overcoming the challenges of green hydrogen production

When hydrogen is produced through the electrolysis of water, using electricity generated from renewable or nuclear sources, it is referred to as "green hydrogen" because there are zero greenhouse gas emissions.[4,5] Deriving hydrogen from renewable energy sources or nuclear energy production allows it to be considered clean hydrogen. In this way, a hydrogen economy is complementary to other forms of renewable energy. However, this can also be a challenge, because producing hydrogen with renewables can take clean energy off the grid. Realizing emission reductions through clean hydrogen requires a continued focus on maximizing the integration of clean energy into the regional electric grid.

Clean hydrogen production necessitates infrastructure that is still under development and the availability of surplus clean energy. Another major barrier to clean hydrogen is the high cost of production compared to fossil-based hydrogen. Achieving clean hydrogen at scale will require reducing the cost of clean electricity and the production of electrolyzers.[6]

Despite these challenges, clean hydrogen has the potential to be an extremely powerful tool for the decarbonization of sectors that might otherwise be difficult to electrify. Hydrogen-powered fuel cell electric vehicles (FCEVs) could be a key

component to reducing greenhouse gas emissions from medium- and heavy-duty vehicles, as well as off-road equipment, including trucks, buses, rail, marine vessels and material-handling equipment. Similarly, hydrogen could close the decarbonization gap for aviation and shipping sectors, in which energy density requirements make battery electrification less technically feasible. Hydrogen also occasionally acts as a feedstock for industrial processes such as ammonia or steel production. [7]

The benefits of renewable, hydrogen-powered fuel cells are also transferable to decarbonizing the electric generation sector. As NJ seeks to achieve 100 percent carbon-neutral energy generation by 2050, hydrogen fuel cells may serve as a dispatchable alternative energy source to support grid reliability. Hydrogen fuel cells could be called upon when renewable technologies such as wind and solar resources are limited, and to reduce the reliance on combustion turbines and diesel engines during peak electricity demand periods.

As New Jersey pursues decarbonization of its economy, hydrogen technology may play a pivotal role in reaching our clean energy future. Hydrogen is a technology of the future that is being developed now. In service to New Jersey's climate goals, expect to see more of it.

More information

- NJ DEP – *https://dep.nj.gov/hydrogen/*
- "Hydrogen and Fuel Cell Technology Towards Clean Energy Goals: Recommendations for NJ" – *http://tinyurl.com/zm3azxrr*
- Hydrogen Production: Electrolysis – *www.energy.gov/eere/fuelcells/hydrogen-production-electrolysis*
- OCED: Regional clean hydrogen hubs briefing – *http://tinyurl.com/3y68td9w*
- "International trade and green hydrogen: Supporting the global transition to a low-carbon economy" – *http://tinyurl.com/32tz422n*

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[1] "Clean Hydrogen in New Jersey" *https://dep.nj.gov/hydrogen/*

[2] "Hydrogen and Fuel Cell Technology Towards Clean Energy Goals" June 8. 2023. *https://www.nj.gov/bpu/pdf/reports/Fuel%20Cell%20Task%20Force-FInal.pdf*

[3] Regional Clean Hydrogen Hub Gulf Coast Regional H2Hub Community Briefing powerpoint, OCED, DOE, October 30, 2023 *www.energy.gov/sites/default/files/2023-11/H2Hubs_Gulf_Coast_Community_Briefing.pdf*

[4] "Hydrogen Energy" *https://dep.nj.gov/hydrogen/hydrogen-energy/*

[5] "Hydrogen Production: Electrolysis" Office of Energy Efficiency & Renewable Energy. *www.energy.gov/eere/fuelcells/hydrogen-production-electrolysis*

[6] "International Trade and Green Hydrogen" International Renewable Energy Agency (IRENA). *http://tinyurl.com/32tz422ny*

[7] "Hydrogen and Fuel Cell Technology Towards Clean Energy Goals" June 8. 2023. *www.nj.gov/bpu/pdf/reports/Fuel%20Cell%20Task%20Force-FInal.pdf*

Smart Energy Networks – benefitting you and the environment

By **Candice Womer**, Senior Communications Specialist, Atlantic City Electric

The electric industry is making the transformation from a centralized, producer-controlled network to one that is less dependent on centralized generation and more dependent on customer interaction. The move to a "Smart Grid" promises to change the industry's entire business model, as well as its relationship with customers, regulators and emerging technology.[1]

Atlantic City Electric is building a Smart Energy Network throughout its South Jersey service area. The network is designed to further improve the reliability and resiliency of the local energy grid and enhance the customer experience, while supporting new tools and programs to help customers save energy and money. As part of Atlantic City Electric's Smart Energy Network initiative, the company is installing upgraded smart meters for approximately 565,000 residential and business customers across its service area. Smart meters have also been introduced in the service areas of PSE&G, JCP&L and South Jersey Gas.

Smart meters can help reduce carbon emissions

One of the most significant advantages of smart meters is the ability to reduce carbon emissions. By providing real-time data on energy consumption, customers can make more informed decisions about their energy usage to make their homes or businesses more energy efficient, helping reduce energy consumption and carbon emissions. Furthermore, smart meters are designed to reduce the number of estimated bills; each meter measures energy on an hourly basis rather than on a monthly basis.

Smart meters also play a crucial role in the integration of renewable energy sources into the grid. As more people generate their own electricity, whether through solar panels or battery storage, smart meters help provide more visibility, allowing better integration between clean renewable energy sources and the grid. With these advantages, smart meters are an excellent tool for individuals and businesses looking to reduce their carbon footprint and improve energy efficiency.

Customers will enjoy numerous benefits

The Smart Energy Network offers customers new tools to help them manage their energy usage and lower their bills. Some benefits that customers will notice after their smart meters are activated include:

[1] *www.nj.gov/bpu/about/divisions/opp/smartgrid.html*

- Connecting to the smart grid will keep power flowing when a customer's private solar energy system doesn't produce all the energy they need.
- Decreasing the number of trucks sent out to read customers' electric meters will reduce climate-heating greenhouse gases.
- New eco-friendly bill-management tools with the addition of innovative online features will allow customers to easily monitor their daily and hourly energy usage patterns. This will empower customers to make environmentally conscious choices, conserve energy and reduce their carbon footprint.
- Enhanced network reliability with faster and more efficient power restoration for customer homes and businesses will be possible following more frequent severe weather events driven by climate change.

The Smart Energy Network supports local communities

In addition to the Smart Energy Network's benefits for households and businesses, local communities within South Jersey are benefiting as well. For example:

- More than $27 million is going to local and diverse companies that are supporting smart meter upgrades.
- Several workforce development programs are providing nearly 200 graduates with job opportunities in the energy field. These programs are designed to educate the future energy workforce, who will help keep the electric grid running, advance clean energy technologies and initiatives, and drive innovation in the energy industry.
- The Smart Energy Network supports these and other efforts by creating jobs for field technicians and support personnel.

There is no upfront cost to customers for new smart meters. Customers will receive several communications prior to their meter upgrade providing additional information about the upgrade process, followed by more information about the new features and benefits that will become available once Atlantic City Electric activates their smart meters.

Atlantic City Electric customers can learn more about the Smart Energy Network features and benefits by visiting *www.atlanticcityelectric.com/SEN.*

EV and charging infrastructure incentives to help convert municipal fleets

By **Amanda Brockwell**, ANJEC Director of Development

New Jersey has ambitious clean energy goals outlined in the State's *Energy Master Plan* that include registering 330,000 Electric Vehicles (EVs) in New Jersey by 2025. To reach these goals, the State is offering several programs and incentives, primarily through the NJ Department of Environmental Protection (DEP) and the Board of Public Utilities (BPU) Clean Energy Program.

A selection of incentives can help municipalities transition to electric fleet vehicles as well as the necessary charging infrastructure. But with so many incentives and varying application processes, it can be confusing to decide where to focus your time and effort. Here are the top EV incentive programs that provide grants and other incentives to local and state governments:

Local government incentives to purchase and charge EVs

Clean Fleet EV Incentive Program – NJ BPU – Local and state governments can apply for up to $4,000 for light-duty battery electric vehicles; $10,000 for Class 2b-6 battery electric vehicles; $5,000 grants for public level-2 chargers; and $4,000 grants toward the purchase of a fleet level-two EV charging station(s) located in an overburdened municipality. Overburdened municipalities are eligible for bonus incentives.

New in 2023 was the inclusion of "make ready" costs. This includes installation of all the electric service work necessary before the charging station can be mounted and is a significant portion of the overall project cost. Visit the BPU website for additional information and current deadlines or email *EV.Programs@bpu.nj.gov.*

Medium and Heavy Duty Electrification Grants – NJ DEP – This program provides incentives to help cover the cost of replacing diesel vehicles with electric ones and installing charging infrastructure. A variety of diesel vehicles are eligible, including shuttle buses, school buses, garbage trucks, and transit buses. Applications are accepted

A tip from an EV business expert

"It is important for municipalities to be aware that incentive program funding from the NJ DEP and NJ BPU cannot be combined. We often recommend that towns apply for both incentives and then decide at a later stage of the project to determine which incentive program is most advantageous to meet their needs. We encourage municipalities to apply for their local utility's incentives, as well as any federal programs they may be eligible for."

– George Koutsouradis, Sales Manager, Bryan Electric

on a rolling basis. For more information, visit the program website and scroll down to the "Grant Agreement" process section for the application and other details: *https://dep.nj.gov/stopthesoot/equipment-modernization-program*

It Pays to Plug In – NJ DEP – This program provides grants to offset the cost of Level 1 and Level 2 EV charging stations at public locations. The program provides up to $750 per Level 1 charging port and up to $4,000 per each Level 2 charging port. Applications are considered on a rolling basis, so despite a wait list to fund projects, municipalities are encouraged to get their applications in queue as soon as possible. Additional information and the application for this program can be found at: *https://dep.nj.gov/drivegreen/it-pays-to-plug-in/* or by emailing *DriveGreen@dep.nj.gov*

EV Tourism Incentive Program – NJ BPU – Municipalities with destination parks, boardwalks or other attractions can apply for up to six charger installations. The program provides grants of up to $5,000 for eligible level-2 chargers. The program also provides grants of up to $50,000 for eligible direct current fast chargers. The application and additional information is available at the BPU website. Email *EV.Programs@bpu.nj.gov* for more information and current deadlines.

Quick guide to other clean energy incentives

The NJ Clean Energy Program (NJCEP) offers financial incentives, programs and services for NJ residents, business owners and local governments to help save energy and money and address climate change.

- Learn about rebates, performance-based incentives, financing programs and other programs to promote cost and energy saving in NJ. *https://cepfindaprogram.com/*
- Certain NJ energy efficiency programs for existing buildings have transitioned to the local utility companies. *https://njcleanenergy.com/transition*
- The Community Energy Plan Grant Program provides support to municipalities to develop climate action plans at the local level based on their assessment of which strategies in the State's *Energy Master Plan* are most applicable in their respective communities. The BPU's Community Energy Plan Implementation (CEPI) Grant Program will award eligible municipalities with funding up to $250,000 to implement clean energy projects in their respective communities. *www.njcleanenergy.com/CEP*

This article focuses on the top incentive programs for municipal EV fleets. Interested in learning more about residential, business, or school EV incentives? Follow this QR code to a DEP incentive summary with a complete listing, including utility company incentives that may apply depending on service area. **https://dep.nj.gov/wp-content/uploads/drivegreen/pdf/incentivesummary.pdf**

Gardens of the

① Jersey City pollinator garden
② Allamuchy Twp. rain garden/certified wildlife habitat
③ Caldwell pollinator garden
④ Liberty Twp. wildflower meadow
⑤ Rumson Emerald Necklace project

⑥ Sea Girt Edgemere Pollinator Garden
⑦ Glenn Rock rain garden
⑧ Volunteers planting a Jersey City pollinator garden

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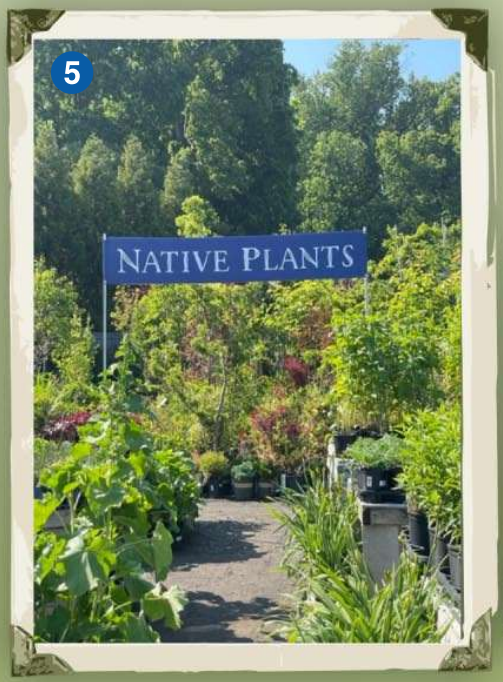

Garden State

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⑨ Howell community garden
⑩ Moorestown Swedes Run project
⑪ Ridgefield Park native plant meadow

⑫ Rumson Emerald Necklace project
⑬ Tending a Jersey City pollinator garden
⑭ Ringwood pollinator garden

Science needs citizen sleuths

By **Stephen Elliott**, ANJEC Water Outreach Specialist

Move over Madame Curie, it's felinefiona84's time to shine. Science has entered a new age, and while amateur contributions to the sciences are not a new concept, technology has empowered the masses in ways previously unimagined. We common folk should no longer be turned off by thoughts of graduate degrees, lab coats, spreadsheets, and such extreme specialization as the study of parasites found under a gorilla's toe nails (unless that's your passion). That's because science relies on all sorts of data sets and the ability to synthesize those data sets in a meaningful way.

It just so happens, regular human beings are excellent at collecting data, and modern technology allows the synthesizers to connect with, educate, and compile the data from those willing to perform some generally simple or easy-to-learn tasks.

Understanding our planet and the universe beyond is a monumental task that requires our collective curiosity and effort. So, even if your days are spent staring at words or code on a computer screen or concocting that perfect macchiato, there are still plenty of ways to play a part. It truly is the age of citizen science.

Prior to the 17th century, simply pondering the elements and espousing some cockamamy theory might earn you the title of natural philosopher (science's predecessor). Science in its current form is relatively new in human history, but it can seem inaccessible.

Welcome citizen scientists!

While we have come a long way in our scientific discoveries, there is still so much we do not know. Because scientists cannot be everywhere at once to observe the natural world or absorb the massive amounts of information returned in a single image from space, they have enlisted the help of amateurs.

Citizen scientists can help with understanding our planet's biodiversity. Some recent estimates suggest there are around 8.7 million unique species on our planet with only about 1.5 million identified and described. In Manchester Township, for example, resident Harry Riker recently spotted the first Red-flanked Bluetail on record in eastern North America. (*http://tinyurl.com/3jdrda9h*).

Citizen scientists can assist in better understanding the impacts of human activity on local waterways. According to the Environmental Protection Agency, there are over 3.5 million miles of rivers and streams in the United States, and no government agency has the capacity to monitor them all.

Citizen scientists can even help digest the massive amounts of data from pictures of the universe. The observable universe is estimated to be around 92 billion light years in diameter. Images returning from a variety of telescopes can cover unfathomable distance, so enlisting the help of the public only makes sense to identify planetary nebula and other items that may need a closer look.

How to get involved

Whatever your area of interest, there are countless apps that can help you identify what you are noticing, but it's important to share the information on a public database such as iNaturalist or Cornell's eBird. This allows your observations to be used by others to better understand bird migrations, insect populations, invasive species locations, and even the health of local plants. You can even organize a bioblitz where amateurs and experts identify every bit of litter they see within a specific geographical location over a few hours or even a whole day.

If flora and fauna don't pique your interest, but you are interested in the health of your local community, water quality is another area where local assistance is desperately needed. Why not work with the AmeriCorps Watershed Ambassador for your watershed or contact the Watershed Institute (*https://thewatershed.org/*) to learn how to build a community stream monitoring program? The Watershed Institute also has a program called NJ Salt Watch (*https://njwatershedwatch.org/road-salt/*), which provides test kits for concerned citizens to monitor salinity in local waterways during the cold months when road salts and brine used for safety purposes can have a detrimental impact on streams and local ecosystems.

Harry Riker of Ocean County recently spotted the first red-flanked bluetail on record in eastern North America.

You can even join the citizen scientist community from the comfort of your own home. NASA's citizen science page (*https://science.nasa.gov/citizen-science/*) lists forty different projects, most of which only require a cell phone or laptop to participate. You may be looking at images of space and identifying cloudy areas that need a deeper look or even sorting through radio signals in the search for alien life.

CitizenScience.gov is another useful source in the search for projects. The opportunities exist for all of us to be "scientists" in some way and to help build upon the collective knowledge that will guide us into a better future. How will you get started?

ANJEC MEMBERS!
We'd like to hear from you!

ANJEC
2024 Member Interest Form

SCAN HERE, or go online to:
forms.gle/v8XZhVJdKCYVAhh88

Please complete our online Member Interest Form so we can better support you in accomplishing your environmental commission's goals and provide targeted resources to meet your needs for 2024 and beyond.

The online form has only eight questions and should take about 10-15 minutes to complete. Thanks for sharing your thoughts!

EC Membership as career stepping stone

By **Cheryl Reardon**, ANJEC Project Director

As an advisory arm of local government, environmental commissions (ECs) work with the governing body, town leaders, businesses and residents to provide education and advice on actions for protecting the local environment. Serving on an EC can open the door to learning, education and skills that lead to future environmental service, careers and elected office. Here are a few outstanding people who have advanced their public service careers after serving on local ECs.

NJ SENATOR BOB SMITH (Piscataway) says, "Serving on the Piscataway Environmental Commission in the 1970s gave me many of the tools needed to influence environmental public policy. It is a great way to contribute to the well-being of your hometown."

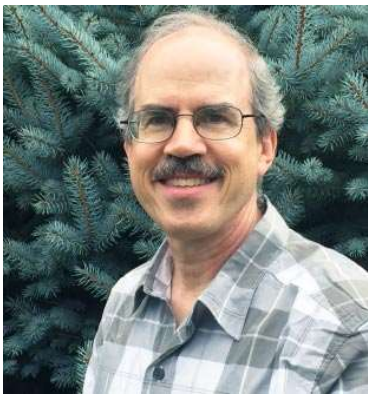
After serving on the EC (1971-1975), Senator Smith was elected to NJ's General Assembly (1986-2001). In 2002, he earned a NJ Senate seat where he now chairs the Environment and Energy Committee. His 27 years in the Legislature and dedicated environmental leadership have led to landmark laws protecting NJ's environment, resources and residents, including cleanup of thousands of contaminated sites, reducing flood hazards and combating climate change. ANJEC recognized Senator Smith's decades of leadership at our 2023 Environmental Congress with the Environmental Champion for New Jersey award.

LARRY FINK (Holmdel) says that serving on the Holmdel EC helped to cultivate excellent leadership, teamwork, communication and organizational skills. He has worked at the NJ Department of Environmental Protection in the Green Acres Program for 18 years, where he has helped preserve more than 100 properties comprising 3,200 acres statewide.

Fink served as Chair of the Holmdel EC and on the Open Space Advisory Committee, leading efforts to preserve properties totaling more than 600 acres. He also served on the Township Committee (2001-2012) and as mayor (2003-2005). He is currently President of the Board of Trustees of Monmouth Conservation Foundation.

BARBARA ROGERS (Cranbury), an ANJEC Trustee, served on the Cranbury EC

Senator Bob Smith



Larry Fink

Barbara Rogers

for 16 years, six as chair, where she led initiatives and coordinated municipal-volunteer partnerships on land use, energy, transportation and waste reduction and advocated for their inclusion in the Green Building and Sustainability Element of Cranbury's *Master Plan*. She initiated and led the Green Team, which has earned Sustainable Jersey bronze-level certification three times.

Rogers says her experience on the EC provided experience for her current position on the Township Committee, where she is currently serving in her second term. In 2022, she served as Cranbury's mayor.

OLIVIA LEWIS-CHANG (South Orange) has served on the Township of Orange EC for the past three years and was elected to the Board of Trustees in May 2023 where she hopes to create initiatives focused on green infrastructure and educating the next generation of environmentally conscious citizens. Olivia is the creator of Bloom Seton Village, an ongoing project to decrease the town's carbon footprint and beautify the Seton Village neighborhood.

She believes that her role as an environmental commissioner led to her commitment to preserve what's left of our green, open space, to educate about the planet's fragility and to be an example of what we can achieve together when we challenge our perceived limitations.

EUGENE M. FUZY (Bordentown Twp.) As a stay-at-home parent to twin boys, Fuzzy says, "Serving on the EC was a great mental outlet working with great people, preparation for running public meetings using Robert's Rules of Order and working with elected officials of all levels." He served as Vice Chair of Bordentown's EC (2015-2016) and went on to be elected to the Township Committee three times, serving as Deputy Mayor 5 times. He is currently in his eighth year as Mayor and is proud to serve the community protecting Bordentown's environmental resources using a data driven approach.
Note: Three of five current elected leaders in Bordentown served on the EC.

DEAN BLUMETTI (Sparta) Besides serving on Sparta's EC for four and a half years, Dean was also on the Planning Board and is currently the Deputy Mayor. He says that serving on the EC underscored the importance of stepping up in public service to make a difference in the community and beyond.

"It exposed me to the workings of local government (including boards and committees) and politics (positive and negative)," he says.

As he advanced from EC member to Chair to Council Liaison, he says he was proud of helping to empower the EC and enabling it to have a much broader and more respected and impactful voice, widening its span of activities including public education and engagement, and deepening its capabilities by expanding the Commission's size and composition.

Olivia Lewis-Chang

Eugene M. Fuzzy

Dean Blumetti

Business member spotlight

Preventing concrete pollution at construction sites

By **Amanda Brockwell**,
ANJEC Director of Development

New Jersey is no stranger to large construction sites. As warehouses, residential housing and commercial developments are built, large amounts of concrete are required. And wherever concrete is poured, equipment must be promptly rinsed clean. The resulting watery slurry has a pH almost as high as Drano – an environmental threat and a huge potential liability for the builder since the US Environmental Protection Agency (EPA) mandates that concrete washout pollutants be safely contained to ensure waterways are protected from pollution.

Capturing and recycling washout isn't just a "green" thing to do; it's a legal requirement that builders ignore at their own peril. Fines are steep and can vary depending on which agency is handing them out. For example, washing out a concrete truck along a curb for five days could result in a $30,000 fine. Under the federal *Clean Water Act* fines could be as much as $15,000 a day.

Headquartered in Patterson, Concrete Washout Systems (CWS) provides a convenient, clean and safe solution to cleaning concrete equipment on construction sites. The specially designed bins ensure polluted rinse water follows all applicable environmental regulations, including NJ stormwater laws. All collected slurry and concrete are sent through the CWS patented recycling process, where the coarse, broken concrete is washed to produce clean aggregate.

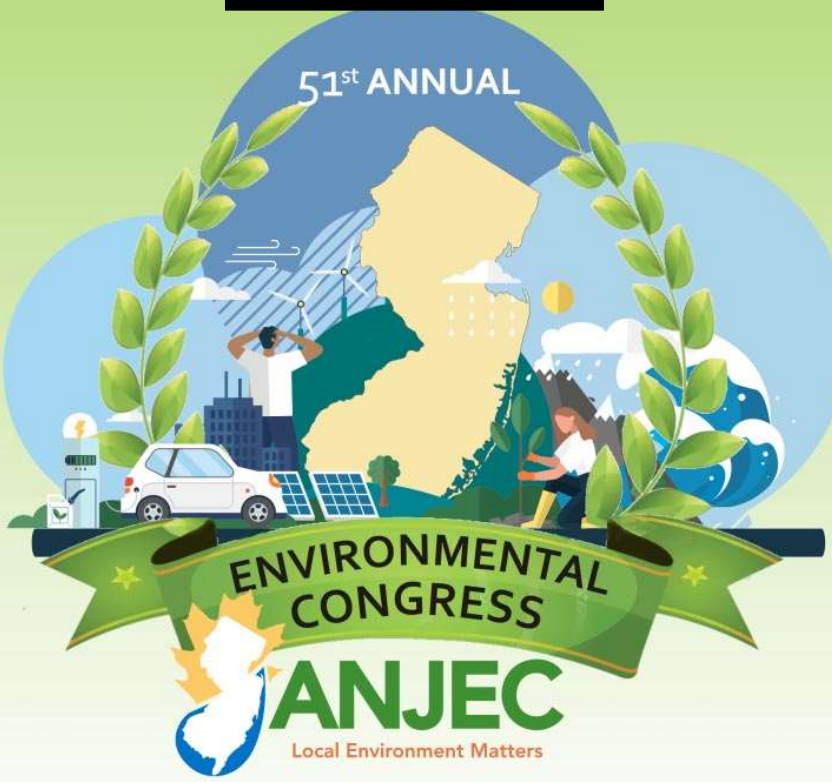
Learn more

To find out more about the EPA regulations to protect our water quality through proper concrete washout, follow the QR code above or visit *www3.epa.gov/npdes/pubs/concretewashout.pdf.*

Concrete Washout Systems is currently being used by some of the largest residential and commercial builders in New Jersey with great success. They have assisted builders in lowering their operational costs relating to concrete washout containment, overall cleanliness of jobsites, maximizing operational efficiency and keeping them in compliance.

To learn more about Concrete Washout Systems, please visit their ad on page 32 or visit *concretewashoutnjny.com.*

SAVE THE DATE



Friday, Sept. 27, 2024

- Morning and afternoon worksops with multiple choices of topics
- Presentation of 2024 Environmental Achievement Awards
- Exhibits by nonprofits and environmental professionals
- Breakfast and lunch included

Watch your email for details to come.

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Considerations for residential mosquito control

By **Jamie Mullen, M.D.,** Secretary of Haddonfield Environmental Commission

As temperatures rise in the Spring, two things start emerging from suburban lawns: daffodils and signs for mosquito control companies. The increasing visibility of these services raises important questions for residents, local governments and environmental commissions.

For residents who are considering a mosquito control service, the primary motivation is either fear of mosquito-borne diseases or a desire to enjoy the outdoors unbothered by biting insects. People concerned with vector-borne disease should consider their health risk (based on pre-existing risk factors, immunity and age), recent vector-borne exposures and mosquito species and densities in the area. Up-to-date information on mosquito-borne diseases in New Jersey can be found on the NJ Department of Environmental Protection (DEP) website (*https://dep.nj.gov/njfw/omcc/mosquito-borne-illnesses/*).

Those concerned with insect bites should consider the time of day they tend to be outdoors, their tolerance to bites and whether biting insects represent an inconvenience or a significant nuisance. It is important to understand that the goal is to reduce the frequency of mosquito bites, not to reduce the mosquito population. Mosquito populations that don't pose a health risk or inconvenience to humans do not need to be addressed.

Integrated mosquito management

Agencies responsible for mosquito control are trained in the practice of integrated mosquito management (*https://secure.caes.uga.edu/extension/publications/files/pdf/C%201154_4.PDF*), which includes four sequential steps:

1. deciding whether the problem requires active mitigation;
2. identifying the disruptive pests;
3. prevention; and
4. control.

The most important preventive measure is to reduce breeding sites by eliminating standing water in buckets, trash cans, tires, rain gutters, boats and tarps - even the smallest pools of water are adequate for mosquitoes to breed. For bird baths, ponds and recreational bodies of water, selective use of Bacillus Thuringiensis Israelensis (BTI) and similar larvicides can reduce mosquito breeding.

After reducing the mosquito population, bites can be reduced by using insect screens, topical repellants and clothing pretreatments (*http://tinyurl.com/3j7u2ymv*).

Even after undertaking preventive measures, residents may decide that chemical insecticides might be helpful. Before engaging a mosquito control company, they should talk with their county mosquito commission, who can advise on best practices and are authorized to spray insecticides on public throughways. Environmental controls administered at a regional level include stocking bodies of water with larvae-eating fish and encourag-

ing benign insects that eat mosquitos or their larvae, such as dragonflies and aquatic beetles. Bats, while voracious consumers of insects, are unlikely to have a significant impact on mosquito populations.

When to hire a professional

Residents should consider engaging private mosquito control companies only after preventive measures have been taken. These companies can apply chemicals to kill larvae in water (larvicides) or flying adults (adulticides), but they don't address breeding sites on adjacent properties, the ability of mosquitoes to travel distances (up to three miles), and the limited efficacy of the chemicals.

Other disadvantages of chemical use are:

- Nonspecific insecticides also kill butterflies, bees, ladybugs and other beneficial insects - not only in the resident's yard but in adjacent properties.
- Some of the more common insecticides are derived from pyrethrins, which were originally derived from chrysanthemum flowers but are by no means "natural."
- Repeated use of these insecticides can even result in the development of resistance.

Nonselective insecticide application poses considerable hazards to humans, pets, beneficial insects, watersheds and wildlife. It is important for consumers to make informed decisions based on reliable sources.

Environmental commissions can be a valuable source of information for residents and effective promoters of nonchemical control and coordinated neighborhood efforts to control breeding.

Additional Resources

- Commercial pesticide applicators in NJ are strictly regulated (www.nj.gov/dep/enforcement/pcp/pcp-regs.htm) and the sale of some insecticides is limited to commercial applicators, who are required to provide to consumers a copy of the "Consumer Information Notice," which lists the insecticides and precautions, although the information on this form is very limited.
- The DEP provides advice on choosing a pest control company (*www.nj.gov/dep/enforcement/pcp/bpo/pem/handouts/Doc11_Choose.pdf*).
- A comprehensive description of insecticides for mosquito control is published by Rutgers University (*https://vectorbio.rutgers.edu/outreach/bmpmcnj.pdf*).
- The American Mosquito Control Association is a professional organization that provides valuable resources (*www.mosquito.org/*).

In honor of ANJEC's Founder and First Executive Director

Candace McKee Ashmun Memorial Fund

ANJEC established the Candace McKee Ashmun Memorial Fund in her honor to support the **ANJEC Open Space Stewardship Grant Program.** The annual program provides small grants to help environmental commissioners carry out local stewardship projects.

ANJEC.ORG/DONATE

To donate, use the QR code or mail a check to ANJEC, PO Box 157, Mendham NJ 07945.

2024 ANJEC Open Space Stewardship Grants

ANJEC is pleased to continue offering grants to environmental commissions (ECs) in New Jersey for projects to advance stewardship and community involvement in parks and other preserved spaces. The 2024 Grant cycle marks the 11th year of the program.

One-year grants of up to $1,500 will be available to ECs in NJ with applications approved for funding in 2024.

Applications due on Friday, April 26, 2024, at 4:30pm.
Details and application at *https://anjec.org/open-space-stewardship-grants/*

ANJEC will provide these grants to ECs for projects that both:

- advance local open space stewardship, and
- help to raise the profile of the environmental commission in the community through publicity and public participation or collaboration with local groups on the project.

Suitable projects include, but are not limited to:

- pollinator gardens
- trail building, signage, maintenance
- printed or online guides, maps, inventories of open space or trails
- open space or trails assessments, plans, maps
- multi-town plans to link open space or trails
- conservation easement inventory, monitoring, outreach, education
- management of invasive species
- habitat enhancement on open lands
- restoration or maintenance of riparian areas within preserved public open space
- educational stormwater management projects on preserved public open space.

Projects completed on/near remediated sites are also eligible for 2024 funding.

Funding for this program is made possible by generous contributions from ANJEC supporters to the Candace McKee Ashmun Memorial Fund and the following sponsors:

LSRPA FOUNDATION
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Apply for ANJEC Stewardship Grant (Page 30)