



ANNE ARUNDEL COUNTY MILLERSVILLE LANDFILL GAS-TO-ELECTRICITY PROJECT

The Anne Arundel County Millersville Landfill Gas-to-Electricity Project recently achieved a significant milestone in delivering more than 300,000,000 kWh of electricity to the local power grid. Since operations began in June 2012, the success of this renewable energy project has been the result of collaborative efforts among multiple stakeholders.

The gas-to-electricity project is located at the Millersville Landfill and Resource Recovery Facility (MLFRRF) in Severn, Maryland and is owned and operated by Anne Arundel County. The MLFRRF is the County's only active municipal solid waste landfill. The project itself consists of two Caterpillar model G3520C generator sets with a total combined nameplate capacity of 3.2 megawatts. This capacity is enough to power 1,900 homes per year.

The gas-to-electricity project was developed through a partnership between Anne Arundel County, the Northeast Maryland Waste Disposal Authority, and LES Operations



Site of Landfill Gas-to-Electricity Facility

Archaea Energy). Funded by a \$2 million Federal Energy Block Grant from the American Recovery Reinvestment Act, the facility was designed, permitted and built in 2011. The project won a U.S. EPA Project of the Year award for 2012.

In November of 2021, the Authority issued a Request for Proposals for gas-to-electricity maintenance services and partnered with LES to continue

June of 2022 and allows for one-year renewals at the County's discretion through June 30, 2032.

The MLFRRF is equipped with extensive leachate collection, storage and treatment systems, a landfill gas collection and recovery system, stormwater management facilities, groundwater monitoring wells, a cardboard recovery building, a citizen drop-off center, a scale house

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and an equipment maintenance building (with a rooftop solar array). The landfill consists of nine disposal cells totaling approximately 260 acres and processes between 170,000 – 200,000 tons per year of municipal solid waste. Waste types including aluminum, mixed scrap metal, cardboard, commingled (single stream) recyclables, batteries, used oil, antifreeze, electronics, textiles, film plastics, food scraps, durable medical equipment, glass, vinyl, oyster shells, and propane tanks are recycled. Cell 9 is currently the active disposal area.

The County contracts with APTIM to operate and maintain the landfill gas collection and recovery system including all wells, horizontal collectors, piping, blower systems and flares. Landfill gas collected from the gas collection and control system is routed to the gas-to-electricity facility. Excess gas not routed to the gas-to-electricity facility is controlled by the landfill's flares, which consist of a utility flare and an enclosed ground flare.

LES is responsible for the day-to-day operations, routine and major maintenance, repair and replacement, and for meeting contract performance specifications. Communication between the landfill staff and the landfill gas-to-energy

facility staff is paramount for the success of the entire operation. Site personnel perform daily monitoring of the blower/flare station, including continuous flow and temperature measurements. Monitoring landfill gas quality and flow at a landfill gas-to-energy facility is critical for ensuring safety and optimal energy production.

The County contracts with SCS Engineers for annual assessments of the facility. SCS has performed annual operations and maintenance audits of this facility since 2015. The contractor interviews with all LES staff regarding recent maintenance activities conducted on the gensets and reports on the overall condition of the facility site and equipment. These audits help guide the stakeholders' planning efforts. SCS partnered with Marx Okubo Associates, Inc in the latest audit performed in 2024.

In December of 2024, LES completed a major overhaul of the Caterpillar engines. All the bearings, seals, gaskets, and components that wear down were disassembled, then inspected, cleaned and replaced, as necessary. It is recommended that engines with more than 100,000 operating hours be overhauled. The caterpillar gensets were carefully

pulled one at a time from the site and sent to an Archaea facility in Oakfield, NY for a rebuild. This process restored the engines to "like new" condition. Below are pictures of one of the rebuilt engines being lifted and placed back into service.

Anne Arundel County receives all electricity revenue from the gas-to-electricity project. The Authority is a PJM generation member and manages all the project's energy, capacity, and renewable energy credit sales and services. PJM is a regional transmission organization that coordinates the movement of wholesale electricity in all or parts of Delaware, Illinois, Indiana, Kentucky, Maryland, Michigan, New Jersey, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, West Virginia, and the District of Columbia. As a PJM capacity resource, the Authority and LES maintain continual communication with PJM regarding energy market scheduling and outage reporting daily.

Overall, this project highlights not only effective renewable energy resources but also demonstrates the power of public-private partnerships in advancing sustainable waste management and clean energy initiatives.



Rebuilt Caterpillar Engine

KING GEORGE LANDFILL SITE VISIT UNDERScores COMMITMENT TO ECOLOGICAL STEWARDSHIP

Representatives from the Authority, Anne Arundel County, and Howard County met at the King George County Landfill in Virginia for their annual site visit on November 13, 2024. This visit is a key component of the Service Agreements between the Authority and Waste Management, which oversees landfill operations on behalf of Anne Arundel and Howard Counties. As stipulated in the agreements, the annual tour serves as an opportunity for the Authority and its Member Jurisdictions to inspect the landfill, assess operational practices, and ensure compliance with environmental regulations. Luke Ohler, the Operations Manager for Waste Management at the landfill, conducted the tour.

The Authority contracts with Waste Management for the acceptance, transportation, and disposal of municipal solid waste from Anne Arundel and Howard Counties. Waste collected in these counties is first delivered to the Annapolis Junction Transfer Station in Jessup, Maryland, where it is then transported by rail to King George Landfill.

The landfill spans 630 acres, with 291 acres designated for landfill development. Since beginning

operations in 1996, the landfill has become a critical waste management facility, processing between 6,000 and 9,500 tons of waste daily. Of this, approximately 2,500 tons per day are delivered by rail from the Annapolis Junction Transfer Station.

Waste Management has implemented several innovative solutions at King George Landfill to manage environmental impacts. One example involves the landfill's extensive landfill gas collection system. The collected gas is directed to the on-site energy facility, where four turbines generate approximately 12 megawatts of electricity, 10 megawatts of which is exported to the local grid. Any excess gas is safely flared off at the site using on-site flares.

Leachate, the liquid that forms when rainwater comes into contact with waste, is treated on-site using an evaporation process powered by the landfill's gas-to-energy facility. This system helps mitigate the environmental impact of leachate, with any excess liquid being shipped to a facility in New Jersey for additional treatment.

King George Landfill is also dedicated to environmental stewardship and conservation. Since 2009, the site has partnered with the Wildlife



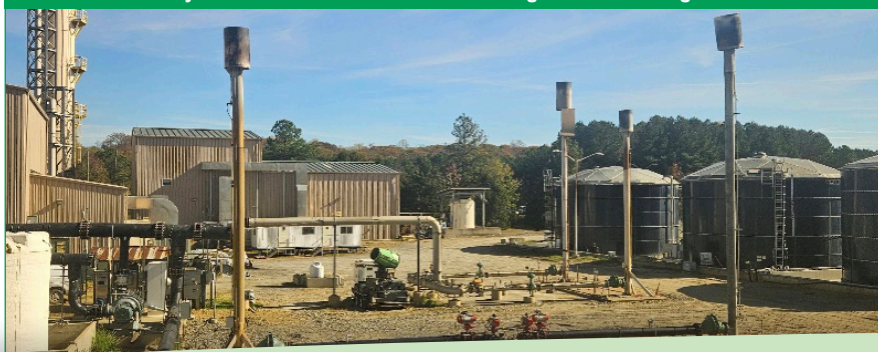
The Authority's James Woods (right) observes as the tipper tilts the rail car and waste falls to the tipping floor.

Habitat Council (WHC) to implement six conservation projects. These initiatives aim to enhance local biodiversity and promote environmental education. Notable projects include habitat creation for species such as purple martins, bluebirds and turtles.

The landfill has also developed an on-site pollinator garden and hosts native tree planting events. These efforts help support local wildlife while fostering community engagement in sustainability practices. Additionally, public outreach programs are organized to raise environmental literacy and promote awareness about the importance of biodiversity.

The annual site visit to King George County Landfill provided valuable insights into the operational efficiency, sustainability practices, and environmental initiatives in place at the facility. By working closely with Waste Management and ensuring regulatory compliance, the Authority and its Member Jurisdictions are helping to manage solid waste responsibly while supporting long-term environmental and conservation goals. King George Landfill stands as a model of both effective waste disposal and proactive ecological stewardship.

King George flares stand vertically in the foreground with the cylindrical leachate tanks in the background on the right.



GUDE REMEDIATION PROJECT UPDATES - FALL 2024 TO WINTER 2025

The Gude Remediation Project in Montgomery County, Maryland, continued to make significant progress toward its goals of transforming the landscape of the closed landfill into a community asset for environmental conservation and recreation. As the project continues to unfold, the Authority remains committed to reporting on the project's progress.

Much has occurred onsite since our last Gude update in the summer of 2024. Allan Myers, the construction contractor, oversaw completion of subgrade construction, landfill gas (LFG) piping installation, leachate and storm drainage construction, among other tasks. This report is an update on the latest accomplishments and ongoing work across various phases of the project.

Liner Flap Welding

Hallaton completed the liner flap welding for the year, marking a significant milestone in the liner installation process. These liner flaps were backfilled along the swales to

secure them in place, completing an important step in the waste containment system. Excavation and backfill of the liner anchor trench took place in Phase S-VII, which is essential for securing the liners and preventing leakage.

Subgrade Construction

Subgrade construction remained a focus of the project, with efforts completed in Phases S-VI and S-VII. The import and placement of vegetative support, topsoil, and subgrade material proceeded to ensure that the ground layers are adequately built up for future phases of construction. This work is vital for the stability of the site because it prepares the ground for further installations and restoration efforts. In parallel, Landfill Environmental Management Services (LEMS) continued its stabilization efforts, completing capping in certain areas and reinforcing the ground behind the swale backfill to ensure stability. Soil screening continues on-site, making sure that all materials meet the necessary environmental standards.

Erosion and Sediment Control

Maintaining the integrity of the site's erosion and sediment (E&S) controls is also a priority. The team completed repairs to these controls this autumn, ensuring that sediment and water runoff are managed properly to prevent environmental impacts. The installation of riprap, a protective rock layer, also began in strategic areas around the site to prevent erosion and stabilize soil.

Moving Excavated Waste and Security

Allan Myers also transported excavated waste from Phase S-VII to the Phase S-V equipment staging area. They additionally completed demolition of the existing materials storage concrete pad. As part of improving site security, Allan Myers completed fencing along the northwest perimeter.

LFG Piping Installation

The LFG piping installation continues in Phases F-III and F-V, with the 12" LFG header tie-in nearing completion. These improvements to the LFG system

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A side-by-side of the GUDE site from June (left) and December (right) 2024. Exposed liners are prominent in June and soil placement overtop of the liners is evident in December. There is also some grass growth on the slope in the foreground in December.

A WIDER CIRCLE: EMPOWERING FAMILIES, INCREASING REUSE AND WASTE DIVERSION



n Thursday, November 21, 2024, the Mid-Atlantic SWANA Chapter visited A Wider Circle,

a nonprofit organization that has been working to eliminate poverty and build pathways to economic stability since its founding in 2001. The organization's work not only helps to meet critical needs in local communities but also reduces waste by giving secondhand items a new life. Tour participants broke into two groups, some joining Janet Dailey, the Chief Inventory and Strategic Partnership Officer, and others touring with Lara Gagrca, the Government Relations Manager. A Wider Circle has three core pillars to its programs: **Furniture & Home Goods, Career Support and Neighborhood Partnership**, all of which involve reuse and recycling.

The organization serves a wide variety of people, with an average family income of \$12,000 per year. Around 10-15 families are supported every day. Importantly, A Wider Circle does not have income or jurisdiction requirements, and no referral from a government body is necessary to receive assistance. However, families

must make an appointment and fill out a questionnaire, with priority given to children, veterans, victims of domestic violence and others in urgent need.

One of A Wider Circle's primary services is providing essential furniture and home goods to individuals and families in need. Beds, which are the most requested items, are often the most difficult to access. A Wider Circle has forged partnerships with decommissioning companies and local hotels, collecting secondhand furniture and sometimes even brand-new mattresses that hotels no longer need, including in one instance, 1,600 rooms' worth of mattresses. The organization also works with partners such as TurboHaul, a company that assists with removing scrap metal and mattresses that don't meet A Wider Circle's standards for distribution.

The guiding principle of A Wider Circle's work is "dignity." All donated items are carefully inspected and sorted. In terms of quality control, A Wider Circle goes to great lengths to ensure that all donated items meet a high standard. For example, all mattresses are steam-cleaned and treated with peppermint oil to prevent

any risk of bedbugs, which is a top concern for families in need. The facility undergoes quarterly inspections by a specially trained dog, and no issues with bedbugs have been found. The organization also takes great care to inspect and test electronics, labeling them to ensure they are in working order. Clothing is checked for rips, stains, or missing buttons, and games and puzzles are verified to have all their pieces. The organization takes great care to ensure that every item they provide meets high standards of quality, reflecting their commitment to treating their clients with respect.

A Wider Circle also offers career support through coaching, professional development and resume assistance. Clients can receive clothing for job interviews, including business attire, and are even paired with personal shoppers to help them choose the right wardrobe. These services are an essential part of A Wider Circle's mission to help families not only with material needs but also with long-term self-sufficiency.

The organization's outreach goes beyond individual assistance, working closely with neighbors to create lasting

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SWANA members tour the donated professional clothing area at A Wider Circle

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A WIDER CIRCLE: EMPOWERING FAMILIES, INCREASING REUSE AND WASTE DIVERSION

change. For example, A Wider Circle distributes 270-300 market bags once a month to residents of Washington Highlands, containing shelf-stable products such as hygiene items and dish soap. They also operate a food pantry and provide a variety of community services at their Washington Highlands location, including therapy, addiction services and classes. However, the Washington Highlands location is smaller, with only four staff members running the program, compared to the larger main location.

The success of A Wider Circle is largely due to its incredible volunteer network. Many volunteers, including seniors and students, contribute their time and energy to the organization. The staff, which includes around 50 employees, is diverse, with many members fluent in Spanish, Creole, and French, enabling them to reach a wider range of families. Additionally, the organization trains volunteers to ensure they can provide the best possible support.

Given that this tour took place towards the holiday season, it was no surprise to see A Wider Circle's holiday programs in full swing. Their Thanksgiving basket program provides families with shelf-stable ingredients for their holiday meals. While they do not provide turkeys (since other organizations more easily supply them), these programs still bring much-needed relief to families facing hardship during the holiday season. A Wider Circle also does a toy drive in December to help make sure every kid gets a gift.

While A Wider Circle's services are invaluable, there are challenges that remain. One of the most significant obstacles is transportation. Many clients lack access to a car or the necessary documentation, such as a driver's license or credit card, which prevents them from using services like U-Haul to pick up their donated items. This challenge has led A Wider Circle to work with moving companies that provide some limited pro-bono delivery services.

A Wider Circle is doing incredible work to address the material and emotional needs of families facing

poverty with a large side benefit to the environment through its diversion of items from the waste stream. Their holistic approach, which combines tangible support with career assistance and community-building, is a model of compassion and effectiveness. The organization's commitment to dignity, quality and empowerment is evident in everything they do, making a significant difference in the lives of those they serve.

To learn more about A Wider Circle, please visit their website ([A Wider Circle](#)).



Couches, chairs, tables, shelves and more get a second chance at life with clients of A Wider Circle

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GUDE REMEDIATION PROJECT UPDATES - FALL 2024 TO WINTER 2025

are essential for capturing and managing gas emissions from the site. In addition, gravel pad work around the LFG wells is ongoing to ensure the effective maintenance of the gas extraction system.

Leachate Management & Water Drainage

Allan Myers completed the construction of the leachate toe drain system, which further enhanced the site's drainage and leachate management capacity.

These systems will help ensure that liquids generated onsite will not pose a risk to the environment. Work slowed down for the winter holidays and snow days, but box culvert installation work continued. These culverts will help with drainage and ensure that water flows appropriately across the site, preventing pooling and erosion. Subcontractors plan to return to the site in the spring to finish LFG installation and stabilization work. The County continues to update the

local community regularly on project progress through direct communications, and postings on the County's project webpage. For more information, please contact the Authority or visit the County's project website at <https://www.montgomerycountymd.gov/DEP/trash-recycling/facilities/gude-landfill/remediation-project.html>.



SAVE THE DATE

Maryland Recycling Network/SWANA-Mid Atlantic Annual Conference

June 9, 2025, 8:00 am-6:00 pm
Turf Valley Conference Center, 2700 Turf Valley Road, Ellicott City, MD
[Register here: 2025 MRN/SWANA Mid-Atlantic Annual Conference - Events - Maryland Recycling Network](#)

SWANA Mid-Atlantic Regional Road-E-O

May 15-16, 2025
Ridgely MD
The annual event will be hosted by Maryland Environmental Service.



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