

# Landfill



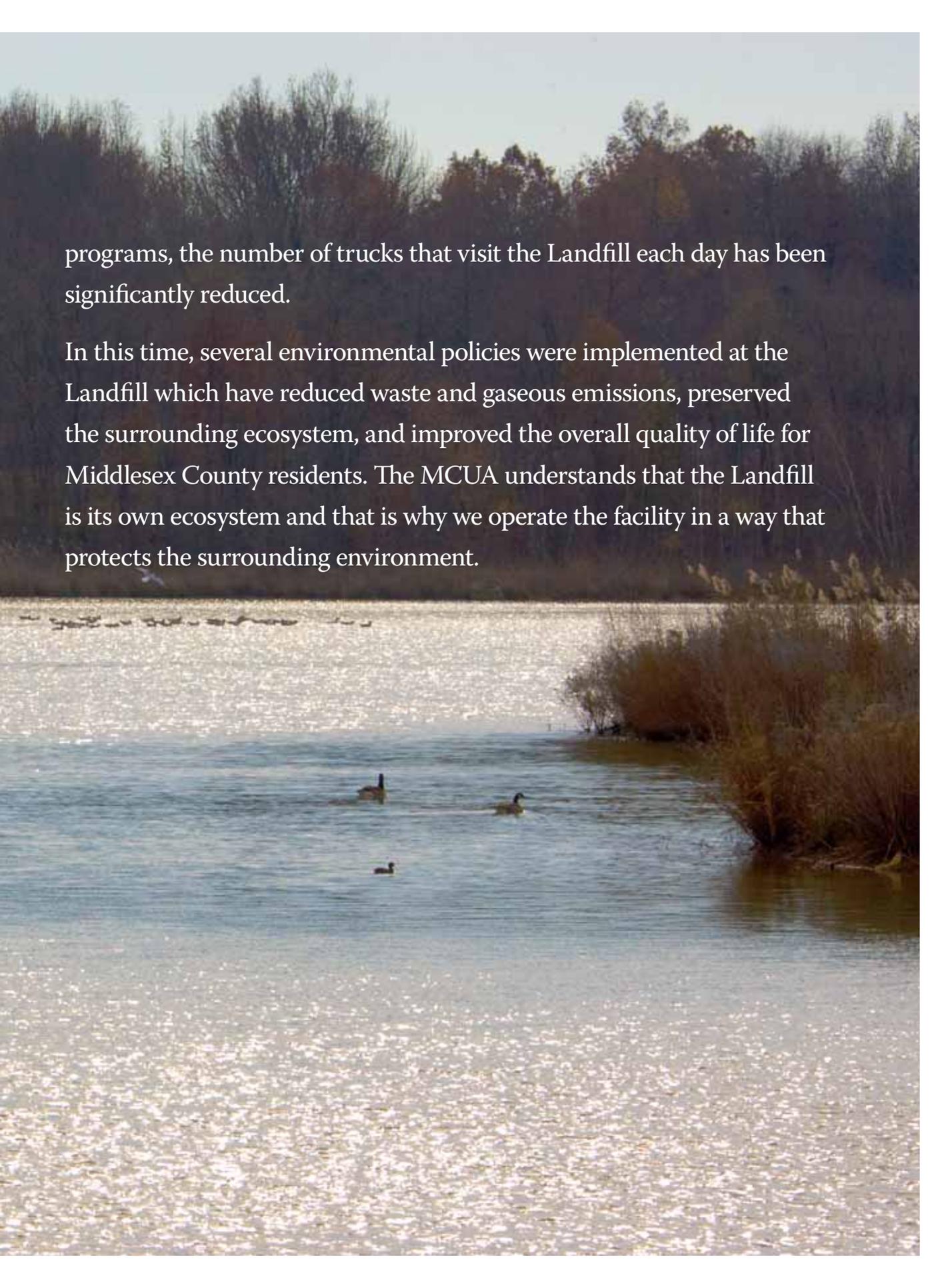
as an Ecosystem

# HISTORY

Like any ecosystem, the Middlesex County Landfill has undergone some significant changes over the years. Back in the 1970's, the Landfill was privately owned and accepted waste from all over New Jersey—even New York City. Back then, more than 1,500 trucks came to the Landfill each day.

By the early 1990's, the Landfill was taken over by the Middlesex County Utilities Authority and, by a decision of the Middlesex County Board of Freeholders, waste was only accepted from the residents and businesses of the county. As a result of this policy change and aggressive recycling





programs, the number of trucks that visit the Landfill each day has been significantly reduced.

In this time, several environmental policies were implemented at the Landfill which have reduced waste and gaseous emissions, preserved the surrounding ecosystem, and improved the overall quality of life for Middlesex County residents. The MCUA understands that the Landfill is its own ecosystem and that is why we operate the facility in a way that protects the surrounding environment.

# LANDFILL AS AN ECOSYSTEM

A landfill is more than just a place to dispose of solid waste. In fact, we at the MCUA operate the facility like the living ecosystem it is. As a result, the Landfill has become an area of flourishing ecological diversity.

- ▶ Innovative environmental policies and good management have helped to improve the quality of surrounding habitats and safeguarded many species.
- ▶ The landfill is constructed so that gaseous and liquid releases are controlled and monitored. Significant engineering infrastructure is in place to allow the surrounding environment to flourish.
- ▶ Organic and recycled cover materials are used in daily operations to preserve natural resources and a protective cap is added to seal off all inactive landfill cells.





# LANDFILL AS AN EDUCATIONAL RESOURCE

The Landfill serves as a place for school groups and professionals to study the environment and the MCUA's proactive management practices.

- ▶ Groups of elementary school students, college students, and professionals take part in guided tours of the landfill and learn about the MCUA's role in its surrounding habitat.
- ▶ More than any textbook or seminar, a tour of the landfill provides students with hands-on learning experiences and valuable information.

All Middlesex County schools are invited to tour the Landfill. Please contact Judy McCabe at (732) 721-3800 or at [jmccabe@mcua.com](mailto:jmccabe@mcua.com) to arrange your school's tour.



# LANDFILL

## AS AN ALL-PURPOSE WASTE FACILITY

The MCUA facility is not just a landfill; it is also a recycling operation for organic materials. In fact, we provide space for the East Brunswick municipal leaf-composting facility as well as for the Middlesex County Improvement Authority's yard waste and leaf compost transfer operations.

For almost twenty years, the MCUA has provided East Brunswick with 15 acres of space for composting purposes. In a given season, the composting facility takes in approximately 8,000 tons of leaves and 3,500 yards of brush. Once composted, this material is available, free of charge, to East Brunswick residents who then use it in places such as flower beds and vegetable gardens. The MCUA also uses some of these materials at the Landfill for covering purposes.





# GAS-TO-ENERGY PROJECT

As a responsible environmental facility, we have made great strides to become more energy efficient. One of our greatest achievements is the Landfill Gas-to-Energy Project. In development for over ten years and in operation since 2001, this project has put the MCUA ahead of the curve for this type of technology.

- ▶ The Landfill is a bioreactor, a biological process in which water mixes with wastes in the Landfill and microorganisms produce Landfill gas containing methane, a viable fuel source.
- ▶ This Landfill gas is transported to the Electric Power Generating Facility in Sayreville through a six-mile pipeline crossing beneath the Raritan River.
- ▶ At the Electric Power Generating Facility, the Landfill gas is used to create more than 12-megawatts of electrical energy. The Landfill Gas-to-Energy Project also nearly eliminates methane from entering the atmosphere.

The electricity generated by this project is used to power the MCUA Wastewater Treatment Plant in Sayreville. By generating our own electricity, we are reducing costs and passing these savings on to residents in our service area.





# BIRD SANCTUARY

It may be hard to believe, but a landfill is often home to a large number of diverse fauna. That's exactly the case at the Middlesex County Landfill, which has become a hot-spot for local birdwatchers. The wide stretches of open space around the landfill make it a great spot for bird watching.

- ▶ The East Brunswick Environmental Commission recently identified nineteen different species of birds that have been observed in the area surrounding the Landfill. Species include bald eagles, Canada geese, mallards, red-tailed hawks, turkey vultures, sandpipers, hummingbirds, swallows, and doves—just to name a few.
- ▶ Thanks to its many viewing locations, the Landfill is also an important stop for local participants in the “Big Day Bird Count.” On this day, celebrated annually by birdwatchers around the world, participants count the number of different bird species in their area and contribute their findings to the International Migratory Bird Day database.
- ▶ The area around the Landfill has long been an area for many other diverse species—including small and large mammals, amphibians and reptiles. Thanks to prudent management of the Landfill, these species have continued to thrive around the site. In fact, the wildlife has become a living part of the Landfill ecosystem.



## BENEFICIAL USE

The Middlesex County Landfill incorporates several recycled materials in its daily operations. This is the latest example of our effort to make the facility more sustainable and environmentally-friendly.

- ▶ Using the residual waste from our Wastewater Treatment Plant, we create a biosolid called Meadow Life.®
- ▶ Meadow Life® is an alternative natural cover material that has the properties of a liming agent and organic fertilizer.
- ▶ Other recycled materials used at the landfill include recycled soils, leaf compost topsoil blend, recycled glass for construction projects and recycled concrete.



# PROTECTION OF GROUNDWATER AND SURFACE WATER

Nothing is more important to the MCUA than safeguarding the environment. As a living ecosystem, the area surrounding the Landfill depends on a supply of clean water to sustain its many plant and animal species.

That's why we have implemented several safety measures that not only prevent ground water contamination, but also alert our staff to any risks of contamination.

- ▶ With the use of a double polyethylene liner, a drainage net, and several feet of filter sand, leachate is contained within the Landfill.
- ▶ The MCUA monitors groundwater quality through the use of monitoring wells placed at locations around the Landfill.
- ▶ The leachate collection system helps to drain the Landfill of rainwater and other liquids and transport these liquids to the Wastewater Treatment Plant for processing.
- ▶ The New Jersey Department of Environmental Protection (DEP) and other regulatory agencies monitor the operations at the Landfill and ensure that all practices meet state regulations.



# MCUA ENCOURAGES RECYCLING IN COMMUNITIES

When residents know that the Middlesex County Landfill is part of a larger ecosystem, they understand the importance of reducing the amount of waste they generate. By recycling and taking simple steps to reduce consumption of materials that generate waste, area residents play an important role in maintaining the ecological diversity of the Landfill.

For the MCUA, recycling is important for both financial and operational reasons. Recyclable items such as glass and aluminum do not breakdown within the Landfill and, therefore, do not contribute to gas production. Further, these items consume valuable Landfill space.

By developing and implementing policies based on solid waste industry trends, the MCUA has been able to decrease the amount of waste coming into the Landfill annually, which extends the life of the Landfill for county residents.

To support recycling efforts in Middlesex County, we provide millions of dollars in host community funds to neighboring municipalities and contribute significant funds to support local recycling programs.

- ▶ In 2002 the Solid Waste Association of North America (SWANA) formally recognized the Middlesex County Landfill under the category of Landfill Management as the SILVER award winner in SWANA's 2002 Technical Division Excellence Awards program.
- ▶ 2001 Project of the Year Award from the U.S. Environmental Protection Agency—Landfill Gas-to-Energy Project
- ▶ The MCUA is proud to offer tours for local school groups. For more information about the MCUA or to arrange a tour, please contact Judy McCabe at (732) 721-3800 or at [jmccabe@mcua.com](mailto:jmccabe@mcua.com).



*"Preserving and protecting Central New Jersey's environmental resources."*

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