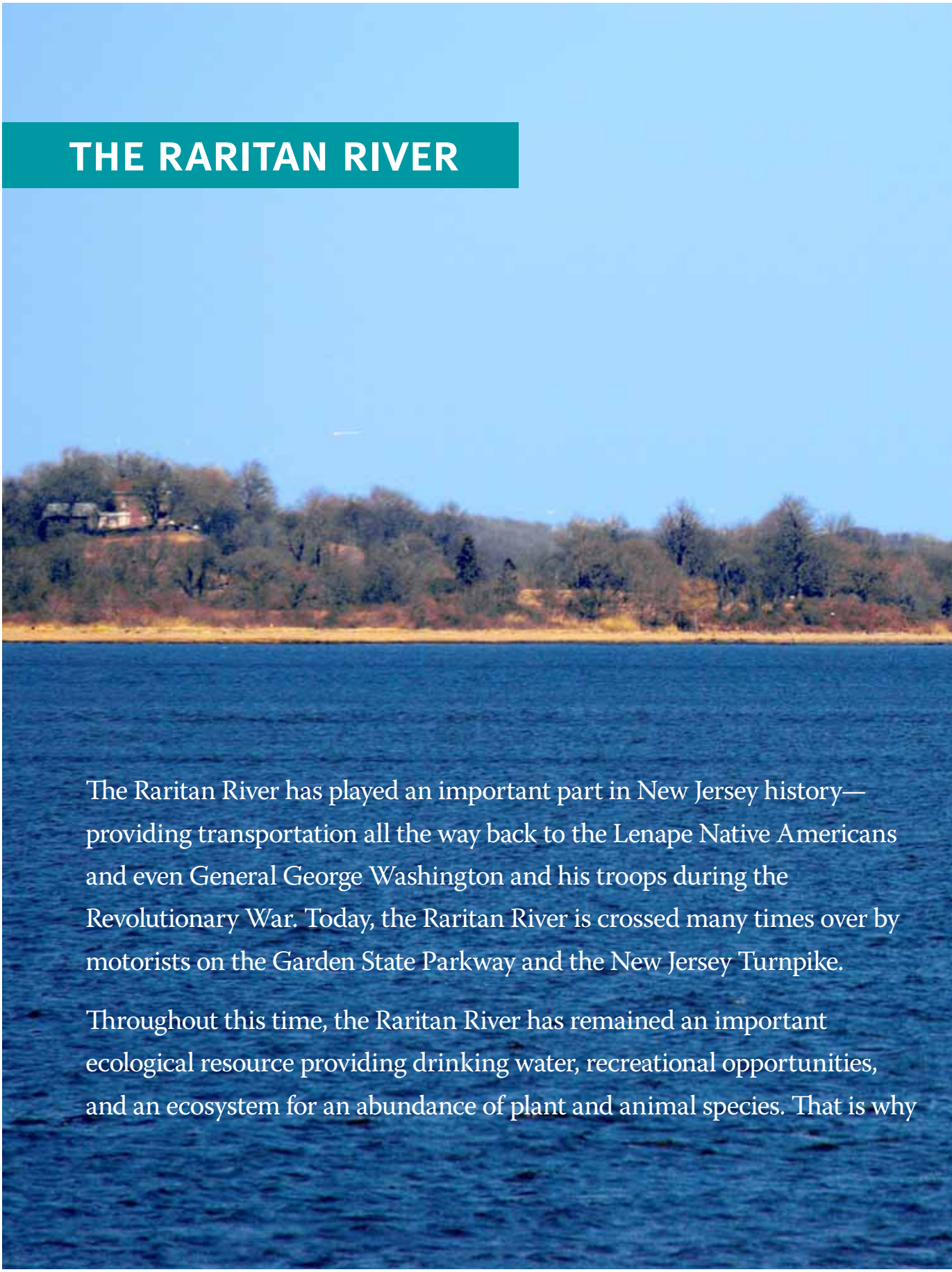
Protecting Water Quality

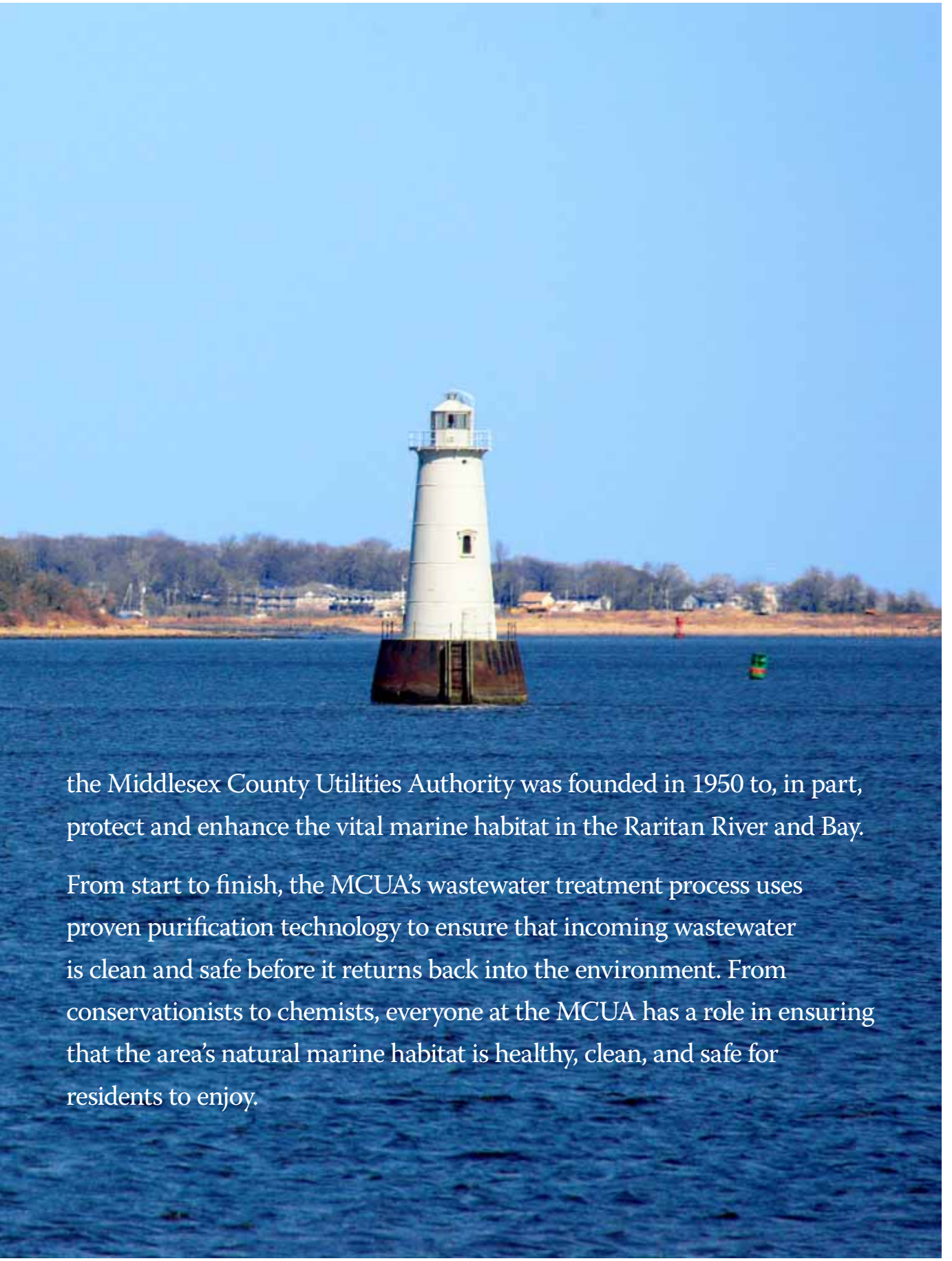
MCUA's Wastewater Division

THE RARITAN RIVER



The Raritan River has played an important part in New Jersey history—providing transportation all the way back to the Lenape Native Americans and even General George Washington and his troops during the Revolutionary War. Today, the Raritan River is crossed many times over by motorists on the Garden State Parkway and the New Jersey Turnpike.

Throughout this time, the Raritan River has remained an important ecological resource providing drinking water, recreational opportunities, and an ecosystem for an abundance of plant and animal species. That is why



the Middlesex County Utilities Authority was founded in 1950 to, in part, protect and enhance the vital marine habitat in the Raritan River and Bay.

From start to finish, the MCUA's wastewater treatment process uses proven purification technology to ensure that incoming wastewater is clean and safe before it returns back into the environment. From conservationists to chemists, everyone at the MCUA has a role in ensuring that the area's natural marine habitat is healthy, clean, and safe for residents to enjoy.

TREATMENT PROCESS OVERVIEW

The MCUA's Wastewater Treatment Facility takes many important steps to ensure that the over 120 million gallons of water it treats every day is of the highest quality before it is safely reintroduced into the environment. This wastewater treatment process relies on five different pumping stations, more than one hundred miles of sewer lines, and the very latest in cutting-edge technology. The water is also tested at the facility's state-of-the-art, on-site laboratory, ensuring clean water and an efficient purification process.

Even a portion of the treated water is conserved and used to reduce energy consumption in other areas. Approximately 10% of the treated water is used to cool the power generating facility, directly reducing the need for other water sources. Furthermore, the wastewater treatment plant is powered primarily by electricity created from captured Landfill gas, greatly reducing energy consumption and costs.

STEPS OF THE TREATMENT PROCESS

The wastewater treatment process is actually the same biological process that occurs in nature—it is simply condensed to an 8–12 hour time period.

- First, five pump stations collect wastewater and transport it to the Wastewater Treatment Facility.
- The water is held in settling tanks where gravity removes more than 70% of the particles in the water.
- Next, the water is purified in aeration tanks where natural organisms consume the remaining dissolved materials as a food source.
- The water is held in another set of settling tanks where gravity removes the natural organisms.
- The water is then disinfected with a chlorine solution and thoroughly tested before being reintroduced into the environment.

MEADOWLIFE®

The biosolids removed during the wastewater treatment process are not put to waste; rather, they are concentrated using gravity thickeners and stabilized by being mixed with alkaline, lime materials. The end result is a natural organic fertilizer and liming agent called MeadowLife®.

Used in agricultural and landscaping projects across the state and region, MeadowLife® is rich in many nutrients and minerals including calcium, nitrogen, potassium, magnesium, sulfur, and phosphorus. MeadowLife® is easy to use, safe to store, and has been found to enrich soils, raise pH levels, increase crop yields, and lower fertilizer costs. The product has even been approved for all agricultural and landscaping applications by the U.S. Environmental Protection Agency and the New Jersey Department of Environmental Protection.

CLEAN WATER: AN ECONOMIC ENGINE

As the MCUA's state-of-the-art Wastewater Treatment Facility improved water quality, the Raritan has become a magnet for revitalization in Middlesex County, particularly in urban areas. The cleaner waterways enabled the creation of vibrant city centers where many new residences as well as restaurants and shops are contributing to the local economy and improving the quality of life.

The Wastewater Treatment Facility has also indirectly encouraged safe, environmentally sensitive industrial growth and development. Some of the area's largest employers, including industrial users of all sizes, now rely on the MCUA to ensure efficient operations and environmental compliance.

PROTECTING FISH AND WILDLIFE

The Wastewater Treatment Facility—like the Middlesex County Landfill—plays an important role in the health and vitality of the area's ecosystem. After all, the employees of the MCUA are not the only living things that call the area home. From frogs to turtles and bald eagles to whitetail deer, a diverse array of species lives in and around the MCUA facilities.

Just this year, MCUA staff identified the largest single group of migratory harbor seals in the Raritan in decades. Were it not for the Wastewater Treatment Facility's prudent management of water quality, these seals and many other species surely would not survive—much less thrive—in the area's expansive marine habitat.

HARBOR ESTUARY PROGRAM

The New York-New Jersey Harbor Estuary Program was authorized in 1987 by the U.S. Environmental Protection Agency. "The purpose of the program is to promote the development of comprehensive management plans for estuaries of national significance threatened by pollution, development, or overuse." The primary goal of the program is to enhance the water quality in the Harbor.

The MCUA works with its counterparts in the New Jersey Harbor Dischargers Group to ensure that the water quality program developed by the Harbor Estuary Program is implemented with the greatest care for the environment as well as the continued successful operation of the area's wastewater treatment facilities.

As an active participant in both the Harbor Estuary Program and the Harbor Dischargers Group, the MCUA is collaborating with other water treatment facilities to identify the best practices in improving water quality and to ensure that these treatment processes are safe and effective.

OPEN SPACE & PARK LANDS

The clean water in the Raritan River and Bay not only supports a healthy marine habitat, but also an abundance of plant and animals species that populate open spaces throughout Central Jersey.

Middlesex County is home to some of the most beautiful areas of New Jersey and the MCUA is proud to protect these areas especially along the Raritan River. We understand the value of open space. And that is what makes the vast stretches of land around the Raritan River particularly important for the area's environment and quality of life.

Because of the preserved open space along the Raritan, the area's natural beauty is not lost amidst the region's large population.

CLEAN WATER & QUALITY OF LIFE

Running directly through Middlesex County to the Atlantic Ocean, the Raritan River and Bay complex is the center of activity for a variety of water sports and outdoor activities. With a vibrant natural habitat and a healthy supply of drinking water, the river serves as a vital component to every day life in Middlesex County.

Simply put, the quality of life in Middlesex County is directly linked to the quality of water in the Raritan. The MCUA recognizes this important connection and is proud to operate a highly efficient wastewater treatment process to protect the area's water supply and, subsequently, the quality of life in Middlesex County.