A Watershed-wide Water Quality Protection Plan for Duhernal Lake

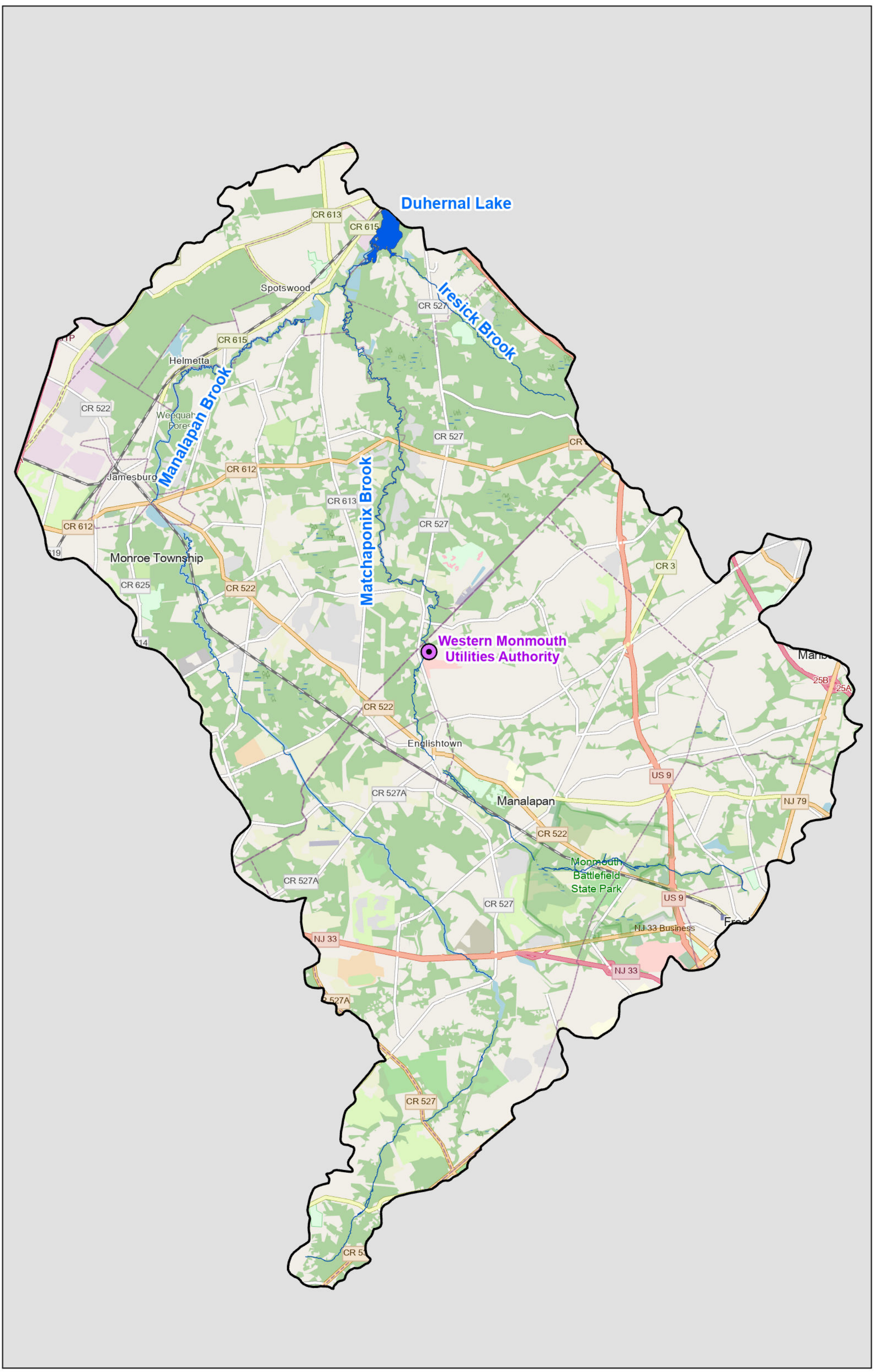
In 2022, the New Jersey Department of Environmental Protection (NJDEP) awarded $9.4 million in grants to local government agencies, nonprofit groups, universities, and others to fund projects that will improve water quality and reduce the impacts of nonpoint source pollution from stormwater. As part of this funding, Western Monmouth Utilities Authority (WMUA) was awarded $300,000 to develop and implement a program to improve water quality in Duhernal Lake. WMUA, as a steward of clean water in the Duhernal Lake watershed, has assumed a leadership role for the completion of this project.

This much needed effort will evaluate measures to reduce nonpoint and point source pollution throughout the lake's watershed, with a primary focus on controlling phosphorus loads to the Lake. Phosphorus is an essential nutrient for aquatic plant growth particularly in impounded waterways like Duhernal Lake. The role that the Lake's sediments play in the internal cycling of phosphorus will also be evaluated. This work will support a framework for NJDEP to determine a Total Maximum Daily Load (TMDL) for phosphorus that will attain compliance with NJDEP's Surface Water Quality Standards.

As part of this effort, WMUA has partnered with Kleinfelder, Inc. and ECM Analytical Laboratory to complete the following tasks:

- Perform water quality monitoring of Duhernal Lake and its associated watershed under dry and wet weather conditions.
- Identify the sources of phosphorus load within the Duhernal Lake watershed, and the relative importance of nonpoint sources (e.g. stormwater runoff carrying phosphorus from agricultural fields or urbanized areas), point sources (e.g. a piped outfall from a factory or wastewater treatment plant), and internal phosphorus load from Lake sediments.
- Quantification of the phosphorus load to Duhernal Lake from the various identified pathways and estimation of potential load reductions that can be achieved through implementation of (1) Best Management Practices (BMPs), whether they are structural (e.g. constructed wetlands or rain gardens) or nonstructural (e.g. reduction in fertilizer usage or street sweeping program), (2) improved reduction of phosphorus load from point sources through optimization of existing treatment facilities and/or construction of new treatment facilities, and (3) in-lake management programs that can reduce the effects of the existing Lake sediment phosphorus.
- Development of a comprehensive Watershed Plan for Duhernal Lake for attainment of Water Quality Standards

Water quality monitoring was conducted in the summer and fall of 2023. WMUA will be providing updates at this website as major milestones are completed, and will be undertaking additional public education activities throughout the course of the project. Per the grant agreement, this project will be executed over the course of three years, with an anticipated completion in 2026.


Duhernal Lake
CR 613
CR 615
Spotswood
CR 527
Iresick Brook
CR 615
Helmetta
Manalapan Brook
CR 522
Weequahic Forest
CR 527
CR 612
Jamesburg
Matchaponix Brook
CR 613
CR 527
CR 612
Monroe Township
CR 3
CR 625
CR 522
Western Monmouth Utilities Authority
25B
25A
CR 522
Englishtown
US 9
CR 527A
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Monmouth Battlefield State Park
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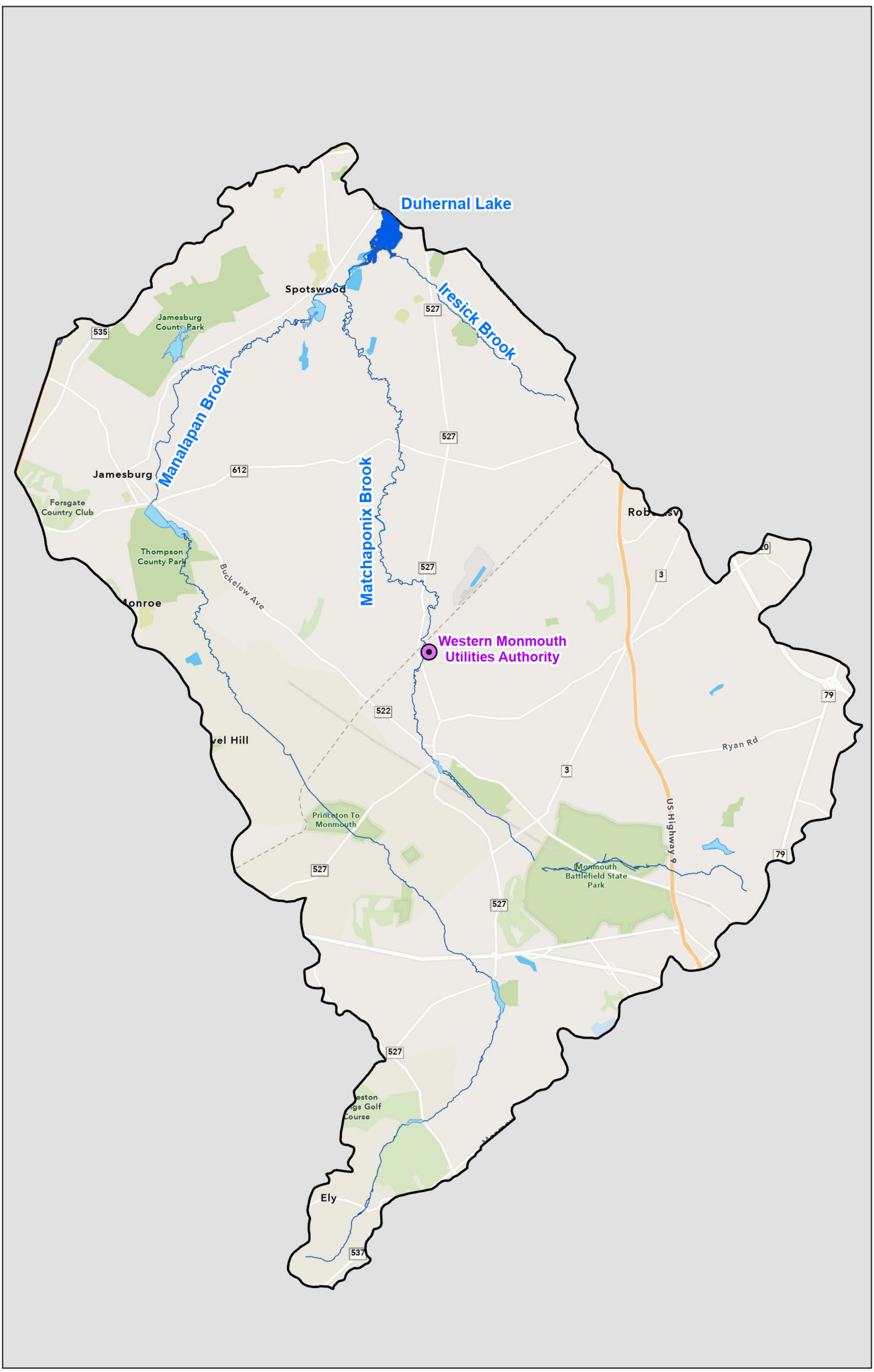
Duhernal Lake
Spotswood
Jamesburg County Park
535
527
Iresick Brook
Manalapan Brook
Matchaponix Brook
Jamesburg
612
Forsgate Country Club
Thompson County Park
Buckelew Ave
Monroe
Western Monmouth Utilities Authority
522
Ryan Rd
3
Princeton To Monmouth
US Highway 9
79
Monmouth Battlefield State Park
Ely
537