**Marie T. Rivers, PE**

marie.rivers@gmail.com | [Website](https://marierivers.github.io/) | [GitHub](https://github.com/marierivers) | [LinkedIn](https://www.linkedin.com/authwall?trk=gf&trkInfo=AQGsb9-NU2fwnwAAAXxIgKV43ncVUuU54EB37NEXPzSsBdR_gNuM1V1XpPW_wY0ONDDw_xW2lTqmPgvf88AbMQ28VNWP1DLJYKuLG0yXW_Z0sCHoICmmIOQR80l5SrTX2_DSxeo=&originalReferer=https://marierivers.github.io/&sessionRedirect=https%3A%2F%2Fwww.linkedin.com%2Fin%2Fmarie-rivers-pe-8284b118)

**SUMMARY OF QUALIFICATIONS**

* Data scientist with in-depth renewable energy and environmental domain knowledge
* 2 years of research scientist experience focused on geospatial components of siting renewable energy
* 10 years of engineering consultant experience focused on hydraulic modeling and water resources
* Strong experience analyzing, modeling, visualizing, and communicating environmental and geospatial data

**EDUCATION**

**Master of Environmental Data Science** (June 2022)

**Bren School of Environmental Science & Management – University of California, Santa Barbara (UCSB)**

Capstone: Improving Usability of Remotely Sensed Snow Data Through Web Based Visualizations and Tutorials

**Master of Science in Environmental Engineering** (May 2011)

**Department of Civil and Environmental Engineering – University of Massachusetts, Amherst**

Thesis: Annual, Monthly, and Storm Scale Analysis of Chloride Fluxes from Highway Deicing Agents to the Cambridge Reservoir

**Bachelor of Environmental Engineering** (May 2009)

**Department of Civil and Environmental Engineering – University of Delaware, Newark**

Concentration: Water Resources and Water Quality; Minors: Civil Engineering and Geology

**EXPERIENCE**

**Geospatial Research Scientist – National Renewable Energy Laboratory**, Golden, CO (12/22–present)

* Modeled wind and solar energy technical potential to quantify the quantity, quality, and cost of renewable resource for numerous siting scenarios and social, regulatory, and environmental constraints
* Developed wind, utility scale solar, and floating photovoltatic supply curves and generation profiles for national and regional renewable energy studies
* Used Python and HPC resources to process large geospatial datasets and evaluate the siting of renewable energy technologies

**Water Resources Engineering Professional Associate – Jacobs Engineering**, Boston, MA (1/20–7/21)

* Managed a combine sewer overflow program by reviewing regulatory requirements, writing compliance reports and advising the city on measures to reduce flow in combined sewers
* Modeled drinking water systems to evaluate scenarios for proposed infrastructure upgrades, operational changes and pipe configurations to improve water quality and resiliency for municipal utilities
* Presented the hydraulic effects of water storage changes using model outputs, graphs and maps to inform decision makers within a municipal water utility
* Completed a geospatial analysis to identify new water infrastructure sites based on system hydraulics, siting constraints, and stakeholder input

**Principal Engineer – Hazen and Sawyer**, Boston, MA(11/17–1/20)

* Prepared technical memoranda, design plans, technical specifications, health and safety plans and inspection reports for water infrastructure design and rehabilitation projects
* Coordinated project status, budget and schedule with project team, client contact, and contractor
* Created Geographic Information System (GIS) maps and summary tables using ArcGIS and Excel for reports and client presentations
* Cowrote proposals to secure project work with existing and new clients

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**EXPERIENCE (Continued)**

**Project Engineer – Tata & Howard**, Marlborough, MA (6/11–11/17)

* Built, calibrated and verified over 10 hydraulic models in WaterGEMS and InfoWater software using historic records, GIS data and hydrant flow tests to allow clients to evaluate existing and future conditions
* Modeled 20+ water distribution systems to provide water utilities with solutions to hydraulic deficiencies
* Wrote water distribution system reports to communicate existing and future conditions, critical components, prioritized infrastructure replacement recommendations, and multi-decade budget estimates
* Designed over 40,000 feet of new and rehabilitated water main projects to improve reliability of community drinking water distribution systems

**ADDITIONAL EXPERIENCE**

**Research Assistant – UMass Environmental Engineering Department**, Amherst, MA (6/09–5/11)

* Modeled transport of road salt in stormwater runoff from highways to water supply reservoirs using continuously logged water quality data and Microsoft Excel Visual Basic to quantify pollutant loading

**Engineering Intern – Geosyntec Consultants**, Acton, MA (6/08–8/08)

* Quantified infiltration rates for porous pavement, bioretention cells, and raingarden systems to monitor Low Impact Development system performance

**Water Resource Intern – Delaware Water Resource Center**, Newark, DE (9/07–5/08)

* Analyzed groundwater field data and modeled groundwater flow in an unconfined aquifer

**Engineering Aide – Massachusetts Dept of Environmental Protection**, Worcester, MA (6/06–8/06, 6/07–8/07)

* Assisted in writing Water Quality Assessment Reports and prepared GIS figures for selected watersheds to document environmental conditions

**TECHNICAL AND PROJECT MANAGEMENT SKILLS**

**Programming, Coding & Data Analysis**:R, Python, SQL, Git (GitHub), PostgreSQL, QGIS, ArcGIS, Google Earth Engine, Tableau, data visualization, machine learning, remote sensing, markdown, hydraulic modeling

**Project Management & Computing**:Microsoft Office Suite (Word, Excel, PowerPoint), Zotero, Slack, ZenHub

**LICENSES AND CERTIFICATIONS**

Professional Civil Engineer, Water Resources – MA License # 51946

OSHA 10 Hour

**PUBLICATIONS AND CONFERENCE PROCEEDINGS**

Rosenlieb, Evan, **Marie Rivers**, and Aaron Levine. “Floating Photovoltaic Technical Potential: A Novel Geospatial Approach on Federally Controlled Reservoirs in the United States.” *Solar Energy* 287 (February 1, 2025): 113177. <https://doi.org/10.1016/j.solener.2024.113177>.

Lopez, Anthony, Gabriel Zuckerman, Pavlo Pinchuk, Michael Gleason, **Marie Rivers**, Owen Roberts, Travis Williams, et al. “Renewable Energy Technical Potential and Supply Curves for the Contiguous United States: 2024 Edition,” January 8, 2025. <https://doi.org/10.2172/2500362>.

Gleason, Michael, Anthony Lopez, and **Marie Rivers**. “Mapping and Characterizing the Visual Impacts of the Existing US Wind Turbine Fleet.” *Applied Energy* 378 (January 15, 2025): 124801. <https://doi.org/10.1016/j.apenergy.2024.124801>.

Pastor, Angela Ortega, Grant Ellwood, Maya Fein-Cole, Jal Desai, Larson Lovdal, Evan Rosenlieb, **Marie Rivers**, Ben Rakov, and Gail Mosey. “Assessing the Solar Photovoltaic Potential in Puerto Rican Brownfields and Reservoirs: Analysis and Modeling,” June 2024.

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Pastor, Angela Ortega, Grant Ellwood, Maya Fein-Cole, Jal Desai, Larson Lovdal, Evan Rosenlieb, **Marie Rivers**, Ben Rakov, and Gail Mosey. “Assessing the Solar Photovoltaic (PV) Potential in Puerto Rican Brownfields and Reservoirs: Detailed Results and Methodology Annex,” June 2024.

Lopez, Anthony, Pavlo Pinchuk, Michael Gleason, Wesley Cole, Trieu Mai, Travis Williams, Owen Roberts, **Marie Rivers**, et al. “Solar Photovoltaics and Land-Based Wind Technical Potential and Supply Curves for the Contiguous United States (2023 Edition),” January 25, 2024. <https://doi.org/10.2172/2283517>.

**Rivers, Marie** and Marc Morin. (2019), “An Alternate Approach to Painting and Structural Improvements to the Bellevue 2 Steel Water Tank” New England Water Works Association 138th Annual Conference, September 22-25, Rockport, Maine. (conference proceeding)

**Rivers, M.T**. 2011 (Masters Thesis). Annual, Monthly, and Storm Scale Analysis of Chloride Fluxes from Highway Deicing Agents to the Cambridge Reservoir. University of Massachusetts, Amherst.