

PATRICK O'SHEA, GISP, EIT

GEOSPATIAL & WATER RESOURCES SPECIALIST

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SKILLS & PROFICIENCIES

Water Resources Engineering: Report Writing, CLOMR/LOMR Studies, Master Planning, HEC-RAS 1-D and 2-D Hydraulic Modeling, HEC-HMS, EPA SWMM, HY8, Civil 3-D, Collection System Analysis

Geospatial & Remote Sensing: ArcGIS Pro, ArcGIS Online, QGIS, GDAL, GeoPandas, DEM/LiDAR Processing, Imagery analysis, Spatial Statistics, Cartography, Data management, StoryMaps, Experience Builder, Drone Piloting, GPS Surveying

Programming & Development: Python, Numpy, ArcPy, JavaScript, HTML, CSS, Git/GitHub, R, Jupyter notebooks, Google Earth Engine, Leaflet, Angular/AngularJS, ESRI Java Script API

PROFESSIONAL EXPERIENCE

GIS Analyst Intern

July 2025 - Present

Northeast Ohio Regional Sewer District / Cleveland, Ohio

- Updates Districts' impervious area inventories to assure accurate billing rates.
- Creates and maintains new stormwater control measures within the District's ArcGIS Online web application.
- Responds to external requests for geospatial data and assists with various mapping initiatives.

Student Contractor: Geospatial Web Developer

May 2024 - May 2025

USGS Web Informatics and Mapping Group (WIM) / Remote

- Advanced and refined functionalities within the StreamStats web map application.
- Expanded the SPARROW nutrient web map application for Tennessee.
- Creating a floodplain library near Midland, Michigan for the Flood Inundation Mapper web map application.

DEVELOP Participant: NASA DEVELOP Program

August 2024 - April 2025

NASA Langley Research Center / Remote

- Used Sentinel and Landsat imagery to map flooding extents and land surface temperature.
- Produced a 2-D hydraulic model of flooding events along the Maipo River in Chile.
- Assisted in research efforts and creating our team's poster and technical report.
- Lead our urban heat team and acted as our main client contact.

Scientist

May 2023 - May 2024

Hazen and Sawyer, Inc. / Cleveland, Ohio

- Modeled and designed collection systems in support of development and combined sewer overflow removal projects
- Created custom python scripts for performing geospatial workflows.
- Created a story map to help the City of Hamilton plan building out their water infrastructure.

Water Resource Design Engineer II

February 2021– September 2022

Water Resources Designer

September 2019 – February 2021

Galloway & Company, Inc. / Johnstown, Colorado

- Utilized publicly available geospatial data to construct 1-D and 2-D hydraulic models in HEC-RAS.
- Delineated subbasins to define basin parameters for EPA SWMM hydrologic models.
- Constructed workmaps and wrote reports in support of FEMA CLOMR/LOMR projects.
- Developed GIS standard operating procedures for the water resources team and produced various GIS derived deliverables both within the team and within the company in general.

Engineering Technician

City of Greeley / Greeley, Colorado

January 2019– September 2019

- Reviewed and provided comments on low to moderately complex civil engineering projects within the City of Greeley.
- Conducted site visits to certify the grades of new residential developments, and met with contractors regarding properties.
- Researched, tracked, and followed up on outstanding development agreements the city entered into.

Hydrology Pathways Intern

USGS Colorado Water Science Center / Lakewood, Colorado

August 2017– December 2018

- Created a 3-D lithologic model to evaluate aquifer storage in the Wet Mountain Valley Aquifer.
- Contributed to the Water, Energy, and Biogeochemical Budgets (WEBB) program by preparing, collecting, and filtering water samples taken from the Loch Vale Watershed in Rocky Mountain National Park.
- Assisted in an array of surface and groundwater projects including the Fountain Creek Watershed Flood and Sediment Transport Study, acid mine drainage in the Sugarloaf Mining District, and NAWQA.

Planetary Geology and Geophysics Undergraduate Research Program*May 2015 – July 2015*

Southwest Research Institute / Boulder, Colorado

- Used Esri Suite to constrain the slope and aspect patterns of selected dune fields on the Martian southern hemisphere.
- Designed a custom methodology, conducted independent research, and communicated my progress at weekly meetings.
- Presented a poster of the project's results at the American Geophysical Union Conference (AGU) 2015.

FORMAL EDUCATION**M.S. Spatial Data Science**/ Pennsylvania State University*May 2025***M.S. Hydrology**/ Colorado School of Mines*December 2018***M.S. Earth Sciences**/ University of California, San Diego*May 2016***B.S. Double Major in Geography and Geology, Mathematics Minor** / University of Miami*May 2015***ADDITIONAL CERTIFICATIONS****GIS Professional: GIS Certification Institute**, Certification number 162529*Active Dec 2025 - Present***Engineering Intern (EIT): Colorado**, Certification number EI.0077541*Active Jan 2021 - Present*