Kyle Onda

Director, Data Science & Engineering — Center for Geospatial Solutions, Lincoln Institute of Land Policy | Director, Internet of Water

kyle.onda@ondawater.org · ondawater.org · github.com/ksonda · linkedin.com/in/ksonda · ORCID 0000-0002-4714-7654

I build open water data infrastructure for the United States. I architected Geoconnex, the persistent identifier system and knowledge graph for U.S. hydrologic features adopted across federal water agencies, and I direct the Internet of Water program — leading a team of data engineers, data scientists, and knowledge graph specialists, as PI on cooperative agreements with USGS, NOAA, and the Bureau of Reclamation. Background spans open standards (OGC), water policy, and global drinking water research (1,750+ citations).

EXPERIENCE

Center for Geospatial Solutions, Lincoln Institute of Land Policy

Director, Data Science & Engineering (2026–present) · Director, Internet of Water (2023–present) · Associate Director, Internet of Water (2022–2023)

Lead the data science and engineering function across CGS, spanning the Internet of Water, Insight Engine, and client-facing Solutions programs. Grew the Internet of Water team from 3 to 10+ staff; serve as PI on federal cooperative agreements with USGS, NOAA, and the Bureau of Reclamation. Direct development of open-source infrastructure harmonizing water data across federal agencies, states, utilities, and NGOs — including Geoconnex, the Western Water Datahub (with Reclamation and the Western States Water Council), and the Arizona Water Observatory (with Arizona State University).

Data Architect, Internet of Water 2019 – 2022

Nicholas Institute for Environmental Policy Solutions, Duke University

Founded the technical work that became Geoconnex: designed the persistent identifier and linked data system for U.S. hydrologic features, and coordinated federal, state, and NGO data producers on standards harmonization.

Data Scientist (Consultant) 2021 – 2023

Xylem, Inc.

Built the Water Equity Lens, an analytics suite for water utilities to evaluate the spatial and social equity of their service delivery, integrating utility operational data with U.S. Census data.

Lead Statistician (Consultant) 2017 – 2020

Valor Water Analytics (acquired by Xylem)

Designed water demand and revenue forecasting tools using hierarchical time series models on customer-level meter data; evaluated randomized and quasi-experimental utility conservation interventions.

Earlier: research roles at UNC-Chapel Hill (urbanization, coastal land use policy, drinking water safety), J-PAL South Asia, Stanford University, and the Colorado Department of Public Health and Environment.

EDUCATION

PhD, City & Regional Planning — University of North Carolina at Chapel Hill 2022

Royster Doctoral Fellow

MSPH, Environmental Sciences & Engineering · MCRP, City & Regional Planning — UNC-Chapel Hill 2014

Best Master's Project of 2014, Dept. of City & Regional Planning

BS, Environmental Engineering — Stanford University 2011

with Distinction; Phi Beta Kappa

SELECTED PROJECTS & SOFTWARE

As PI / director (architecture and direction by me; built by my team): **Geoconnex** (geoconnex.us) — open persistent identifier system and knowledge graph for U.S. hydrologic features; **Western Water Datahub** (wwdh.internetofwater.app) — unified OGC API access to western U.S. reservoir, snowpack, and streamflow data; **Arizona Water Observatory** — statewide water data platform with ASU.

Personal software (code I write and maintain): **edr4r** (github.com/ksonda/edr4r) — R client for OGC API–Environmental Data Retrieval; **teacup-generator** (github.com/cgs-earth/teacup-generator) — daily reservoir conditions pipeline for 214 western U.S. reservoirs feeding Reclamation teacup visualizations.

PEER-REVIEWED PUBLICATIONS

Cole, Narayanan, Connors, Tewari, **Onda**. "Water Stress: Opportunities for Supply Chain Research." *Production and Operations Management* 34(7), 2023/2025.

Colohan, **Onda**. "Water data for water science and management: Advancing an Internet of Water." *PLOS Water* 1(3), 2022.

Marston et al. (incl. **Onda**). "Water-Use Data in the United States: Challenges and Future Directions." *JAWRA* 58(4), 2022.

Branham, Kaza, BenDor, Salvesen, **Onda**. "Removing Federal Subsidies from High-hazard Coastal Areas Slows Development." *Frontiers in Ecology and the Environment* 20(9), 2022.

Onda, Tewari. "Water systems in California: Ownership, geography, and affordability." *Utilities Policy* 72, 2021.

Branham, **Onda**, Kaza, BenDor, Salvesen. "How Does the Removal of Federal Subsidies Affect Investment in Coastal Protection Infrastructure?" *Land Use Policy* 102, 2021.

Onda, Branham, BenDor, Kaza, Salvesen. "Does Removal of Federal Subsidies Discourage Urban Development?" *PLOS ONE* 15(6), 2020.

Onda, Sinha, Gaughan, Stevens, Kaza. "Missing Millions: Undercounting Urbanization in India." *Population and Environment* 41(2), 2019.

Bain et al. (incl. **Onda**). "Global Assessment of Exposure to Faecal Contamination through Drinking Water." *Tropical Medicine & International Health* 19(8), 2014. (700+ citations)

Onda, Crocker, Kayser, Bartram. "Country clustering applied to the water and sanitation sector." *Int. J. of Hygiene and Environmental Health* 217, 2014.

Marks, **Onda**, Davis. "Does sense of ownership matter for rural water system sustainability?" *J. of Water, Sanitation and Hygiene for Development* 3(2), 2013.

Onda, LoBuglio, Bartram. "Global Access to Safe Water: Accounting for Water Quality and the Resulting Impact on MDG Progress." *IJERPH* 9(3), 2012. (~700 citations)

Reports: OGC Water Quality Interoperability Experiment Engineering Report (OGC 25-016, 2025); Water Data Infrastructure for Low- and Middle-Income Countries (Stanford Water in the West, 2021). Full list with links and abstracts: ondawater.org/publications.html

SERVICE & LEADERSHIP

Chair, Board of Directors — Orange Water and Sewer Authority (OWASA) 2024 – 2026

Co-Chair, Water Quality Interoperability Experiment — Open Geospatial Consortium 2023 – 2024

Co-Chair, Technology Committee — American Water Resources Association 2021 – 2023