

Statement of Purpose

Cities depend on water systems that most residents rarely notice until something fails. Aging pipes, unpredictable rainfall patterns, and growing urban populations place pressure on infrastructure that was often designed for very different conditions. During my undergraduate studies in environmental science, I became increasingly interested in how urban water systems respond to environmental stress and policy decisions. This interest led me to focus on urban water management as a field where environmental science, engineering, and public policy intersect. I am applying to the Master's program in Environmental Policy and Management to develop the analytical and research skills needed to study how cities can build resilient water systems under changing environmental conditions.

My academic preparation began with a Bachelor's degree in Environmental Science at Central State University, where I developed a strong foundation in hydrology, environmental chemistry, and data analysis. Courses in watershed science and environmental modeling introduced me to the complexity of urban water cycles and the ways infrastructure, climate variability, and land use shape water availability and quality. In my junior year, I completed a research project examining stormwater runoff patterns in suburban drainage basins. Using GIS mapping and rainfall data, I analyzed how land development altered surface runoff intensity during heavy storms. This project showed me that environmental challenges often emerge from the interaction between natural systems and human design decisions.

Beyond coursework, I pursued opportunities that allowed me to apply these concepts in practical contexts. During a summer internship with the regional Water Resources Planning Agency, I assisted with data collection for a municipal flood mitigation study. My responsibilities included compiling precipitation records, reviewing infrastructure reports, and supporting the development of spatial maps used by city planners. Observing the planning process revealed how technical knowledge must be translated into policy decisions that balance environmental protection, economic constraints, and public safety. This experience strengthened my interest in policy-focused environmental research and showed me how interdisciplinary collaboration shapes real-world solutions.

My research interests center on urban water resilience, particularly the ways cities adapt water infrastructure to increasing environmental uncertainty. I am interested in studying how policy frameworks influence the adoption of green infrastructure strategies such as permeable surfaces, stormwater capture systems, and urban wetland restoration. These approaches can reduce flood risk while improving water quality, yet implementation varies widely across cities. Through graduate study, I hope to investigate how governance structures, funding models, and regulatory policies affect the success of these adaptation strategies.

The Environmental Policy and Management program at your university offers a strong environment for this work. The program's emphasis on applied research and interdisciplinary collaboration aligns with my academic goals. I am particularly interested in the Urban Sustainability Research Group, whose recent projects examine climate adaptation in municipal infrastructure planning. The opportunity to study under faculty whose work focuses on water governance and urban environmental resilience would provide valuable guidance as I develop my own research direction.

In the long term, I aim to work at the intersection of environmental research and policy development. My goal is to contribute to organizations that design and evaluate urban sustainability initiatives, whether through governmental planning agencies, environmental research institutes, or international organizations addressing climate adaptation. Graduate training will allow me to deepen my understanding of environmental policy analysis, develop stronger research methods, and engage with complex environmental systems in a structured academic setting.

Urban water systems illustrate how environmental challenges emerge through the interaction between infrastructure, policy, and natural processes. Graduate study will allow me to investigate these relationships more closely and develop the expertise necessary to contribute to sustainable urban planning. I am eager to expand my analytical skills and participate in research that addresses the environmental challenges cities will face in the coming decades.