Mission Statement

The mission of the Water Resources Agency (WRA) within the University of Delaware’s Institute for Public Administration is to provide water resources planning and policy assistance to governments in Delaware, the Delaware Valley, and along the Eastern Seaboard through the University’s land grant public service, education, and research role.

Goal

Be recognized as the best university water resources planning/policy institute east of the Mississippi River.

UD Strategic Milestones

WRA aspires to contribute to the six strategic milestones outlined in the Strategic Plan for the University of Delaware (UD) as part of the University’s PATH TO PROMINENCE™:

I. A Diverse and Stimulating Undergraduate Academic Environment
   • Teach undergraduate courses in Water Resources Engineering (CIEG 440), Planning and Design (CIEG 452), and Regional Watershed Management (UAPP 467).
   • Fund three to four water resources undergraduate research students per semester from UD’s civil and environmental engineering, geology, geography, environmental science and policy, and natural resources programs.
   • Advise water resources undergraduate research students through the Delaware Water Resources Center internship program.
   • Provide service-based (and problem-based) learning opportunities for undergraduate students within the White Clay Creek National Wild and Scenic River watershed and at the UD Rain Garden.
   • Partner with the Delaware EPSCOR program on cooperative undergraduate research in the Northeast Universities Consortium with the Universities of Vermont, New Hampshire, and Rhode Island.

II. A Premier Research and Graduate University
   • Teach graduate courses in Regional Watershed Management (UAPP 611), GIS in Public Policy (UAPP 652), GIS in Public Policy (UAPP 655), and Watershed Planning and Design (CIEG 652).
   • Fund water resources graduate research fellowships through the Institute for Public Administration and the MPA/MA programs in the School of Urban Affairs & Public Policy.
   • Perform water resources research in the White Clay Creek National and Wild Scenic River watershed funded by the U.S. National Park Service and National Fish and Wildlife Foundation.

III. Excellence in Professional Education
   • Sponsor the annual Delaware Water Policy Forum.
• Partner with Delaware State University and UD student sections of the American Water Resources Association.
• Sponsor a professional certificate program in stormwater management and hydrology/hydraulics.

IV. The Initiative for the Planet (The Green University)
• Collaborate with the UD Environmental Institute (DENIN).
• Integrate Regional Watershed Management (UAPP 411/611) and Seminar in Water Resources (new course, UAPP 467/667) into an interdisciplinary water major/minor within the environmental curriculum.
• Partner with the Delaware Water Resources Center in the College of Agriculture & Natural Resources on UD-WATER (the University of Delaware Watershed Action Team for Ecological Restoration).
• Develop a UD water resources business alliance with water-treatment and water-sensing firms such as IBM, GE, and Honda to conduct on-campus research at the UD Chrysler site.

V. The Global Initiative
• Develop a winter session study-abroad program in water resources planning, policy, and management.
• As in the past, advise international students interested in water resources from countries such as Uzbekistan, Kyrgyzstan, Brazil, Portugal, Germany, New Zealand, Russia, Georgia, Ukraine, Philippines, China, Taiwan, and South Korea.

VI. The Engaged University
• Partner with the state of Delaware, New Castle County, City of Newark, and City of Wilmington in funded support to conduct regional water resources planning and management.
• Serve as Delaware’s Water Coordinator and technical advisor to the Delaware Water Supply Coordinating Council as required by state law.
• Served as watershed coordinator of the Christina Basin Clean Water Partnership among the states of Delaware and Pennsylvania, the Delaware River Basin Commission, and the U.S. Environmental Protection Agency.
• Serve as watershed coordinator of the White Clay Creek Wild and Scenic River Committee in collaboration with the U.S. National Park Service.
• Continue partnerships in Sussex County with the College of Agriculture & Natural Resources and the College of Earth, Ocean, and Environment through the Coastal Community Enhancement Initiative (CCEI).

GOAL #1 – ENHANCE THE QUALITY OF EDUCATIONAL PROGRAMS

Enhance the quality of the educational role of WRA by offering courses, seminars, and forums with a water resources focus and mentoring undergraduate and graduate students with funded fellowships.

Significance
The goal to provide water resources education opportunities at the University is significant to the interdisciplinary science and policy education mission. Education is a basic role of the University of Delaware. WRA strives to educate students who will thrive as future leaders in water resources with its public-, private-, and nonprofit-sector partners.

Challenges
The challenge is to participate in water resources education opportunities on campus while expanding WRA’s funding base from funding federal, state, and local government and foundation partners.
Action Steps
1. Sponsor annual on-campus Delaware water policy forum. Past forums:
   • DROUGHT.02: Debate and Panel Discussion Concerning Water Supply Policy in Delaware, Oct. 9, 2002
   • The Historic Christina Basin: Delaware’s First Watershed, Oct. 13, 2004
   • Water Friendly Landscape Design: A Prescription for Healthy Watersheds, Oct. 21, 2005
   • The Delaware: Challenges, Opportunities Affecting a Working and Environmental River, Oct. 16, 2006

2. Teach water resources courses in School of Urban Affairs & Public Policy and College of Engineering:
   • UAPP 411/611—Regional Watershed Management, spring semester, 3 credits.
   • UAPP 652 (1 credit) and UAPP 655—Introduction to GIS and Public Policy, spring semester, 3 credits.
   • CIEG 440—Water Resources Engineering, fall semester, 3 credits.
   • CIEG 452/652—Watershed Engineering, Planning, and Design, spring semester, 3 credits.

3. Mentor students in the following roles:
   • Continue to offer funded water resources fellowships to graduate students.
   • Fund 3-4 undergraduate water resources research assistants.
   • Serve on the committees of student analytical papers, theses, and dissertations.
   • Sponsor the Delaware student section of the American Water Resources Association (AWRA).
   • Assist teachers with use of geospatial technologies throughout the K-12 curriculum and project WET.

4. Sponsor and staff water resources education and outreach exhibits at events. Examples:
   • University of Delaware Ag Day (April)
   • Newark Community Day (September)
   • University of Delaware Coast Day (October)

Future Steps
• Develop a Seminar in Water Resources Planning course (3 credits).
• Collaborate with colleagues on campus to form an interdisciplinary water resources major/minor in the environmental curriculum.
• Develop a Pathways water resources course to be offered to freshmen.
• Develop a winter session study-abroad program in water resources.

GOAL #2 - STRENGTHEN PROGRAMS OF RESEARCH

Strengthen programs of research by seeking new opportunities to collaborate with University faculty, staff, and students to conduct and publish funded water resources technical and policy research.

Significance
Research, the search and quest for new knowledge, is central to the mission of the University of Delaware.

Challenges
The challenge will be to search for and obtain federal and foundation-funded grants and carry out water-related research while maintaining a focus on the education and service role of WRA.
Action Steps
1. Continue to collaborate with colleagues on campus and obtain a National Science Foundation grant in Water Sustainability to fund the Christina Basin Experimental Watershed Observatory as an on-campus education and research laboratory.

2. Continue to partner with Cornell, Penn State, and Rutgers Universities on research on the state of the Delaware River Basin.

3. Continue to seek opportunities to publish and present peer-reviewed research on topics such as water policy, watershed management, water-quality trends, and other water resources topics.

4. Continue to maintain a central repository of GIS data for access by University of Delaware faculty, staff, and students.

5. Continue to collaborate with faculty and staff from other colleges and departments to conduct water resources research through private and publicly funded grants.

6. Continue to fund the School of Urban Affairs & Public Policy Excellence in Water Resources Scholarship Medal.

Future Steps
Pursue funded research and partnerships in the following emerging water resources areas:

- Impacts of impervious cover on watershed health
- Water quality–trend analyses
- GIS watershed atlas for the International Joint Commission between the U.S. and Canada.
- GIS-based watershed modeling
- Impact of global warming on Delaware’s water resources
- Sustainable watershed funding and financing
- Watershed ecosystem services and socio-economics of goods and services

GOAL #3 - SHARPEN THE FOCUS OF PUBLIC SERVICE

Sharpen the focus of public service and provide watershed science and policy assistance to governments in Delaware and the Delaware Valley.

Significance
WRA receives funding from governments and foundations to provide water resources assistance to the public. This public service and public policy role is significant to the land grant mission of UD.

Challenges
Expand and diversify revenue sources to continue providing water resources assistance to Delaware, New Castle County, Newark, Wilmington, and other governments in the Delaware Valley and along the Atlantic seaboard.

Action Steps
1. Continue to serve Delaware with assistance in water resources planning and management.
   - Delaware Water Supply Coordinating Council and State Water Coordinator as per state law
   - Christina Basin Clean Water Partnership to restore streams to fishable and swimmable status by 2020
   - Delaware Source Water Protection Program as per Safe Drinking Water Act Amendments of 1996
   - Delaware Tributary Action Team GIS mapping and website support for:
2. Continue to assist New Castle County government in the following capacity:
   • Water Resource Protection Area program
   • Floodplain management
   • Water-supply and wastewater planning and management

3. Continue to serve the City of Newark with water supply planning assistance.
   • Water-supply projects (Newark Reservoir and South Wellfield iron-treatment plant)
   • Water-supply and wastewater-system modeling
   • GIS mapping for source-water protection and stormwater management

4. Continue to serve the City of Wilmington with water resources technical assistance.
   • Combined Sewer Overflow plan
   • Brandywine/Hoopes Reservoir water-supply operating plan
   • Brandywine Creek Source Water Protection Program

**Future Steps**
• Seek to pursue more funded work in collaboration with governments in Kent and Sussex Counties and adjacent states (N.J., Pa., and Md.).
• Expand the capacity of WRA’s GIS laboratory (the first water-based GIS laboratory in the U.S., est. 1970s) to conduct more work with federal, nonprofit, and business partners.