

**STRATEGIC PLAN**  
**for the**  
**WATER RESOURCES AGENCY**  
**Institute for Public Administration**  
**College of Human Services, Education & Public Policy**  
**November 26, 2008**

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**Mission Statement**

The mission of the Water Resources Agency (WRA) 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
  - Continue funding (\$300,000) to over 60 water resources undergraduate research students from UD's civil engineering, geology, geography, environmental science, and natural resources programs.
  - Advise water resources undergraduate research students through the Delaware Water Resources Center internship program.
  - Teach undergraduate courses CIEG 440 (Water Resources Engineering) and CIEG 452 (Watershed Engineering) and provide service-based learning opportunities along the White Clay Creek.
  
- II. A Premier Research and Graduate University
  - Pursue water resources research in the UD Experimental Watershed in the White Clay Creek National and Wild Scenic River Watershed.
  - Fund graduate research assistantships in water resources through the Institute for Public Administration and the MPA/MA programs in the School of Urban Affairs & Public Policy (SUAPP).
  - Collaborate with Cornell, Penn State, and Rutgers Universities on the State of the Delaware River Basin research project.
  - Teach graduate courses UAPP 611 (Regional Watershed Management), UAPP 652 (GIS in Public Policy) and UAPP 655 (GIS in Public Policy).
  
- III. Excellence in Professional Education
  - Sponsor the eighth annual Delaware Water Policy Forum.
  - Partner with the Delaware and UD Student sections of the American Water Resources Association.
  
- IV. The Initiative for the Planet (The Green University)
  - Join the UD Environmental Institute.
  - Integrate UAPP 611 (Regional Watershed Management) into 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.
  - Educate students about the UD's first rain garden.

## V. The Global Initiative

- Engage students in a winter session abroad program in water resources planning, policy, and management (future).

## VI. The Engaged University

- Partner with the state of Delaware, New Castle County, City of Newark, and City of Wilmington in regional water resources planning and management.
- Serve as Delaware's first State Water Coordinator and staff the Delaware Water Supply Coordinating Council as required by state law.
- Serve as watershed coordinator of the Christina Basin Clean Water Partnership between Delaware and Pennsylvania, the Delaware River Basin Commission, and the U.S. Environmental Protection Agency (USEPA).
- Coordinate the National Park Service's White Clay Creek Wild & Scenic River Committee.
- Continue WRA's involvement with the partnership among the College of Human Services, Education & Public Policy, the College of Agriculture & Natural Resources, and the College of Marine & Earth Studies through the Coastal Community Enhancement Initiative (CCEI).

## **GOAL #1 - SHARPEN THE FOCUS OF PUBLIC SERVICE**

Sharpen the focus of public service and provide water policy assistance to governments in Delaware, New Castle County, Wilmington, and Newark.

### **Significance**

The Water Resources Agency receives funding from governments to provide water resources assistance to the public. This public service role is significant to the missions of the College of Human Services, Education & public Policy (CHEP) and the School of Urban Affairs & Public Policy (SUAPP), UD's public policy school.

### **Challenges**

Expand and diversify revenue sources to continue funding water resources service to Delaware, New Castle County, Newark, and Wilmington and other governments in the Delaware Valley and along the East Coast.

### **Action Steps**

1. Continue to serve the state of Delaware with water resources and watershed planning and management:
  - Delaware Water Supply Coordinating Council and State Water Coordinator as per State law.
  - Christina Basin Clean Water Partnership between Delaware and Pennsylvania to restore streams to fishable, swimmable, and potable status by 2015.
  - Delaware Source Water Protection Program as per Safe Drinking Water Act Amendments of 1996.
  - Delaware Tributary Action Team GIS mapping and website design for:
    - Christina Basin Pollution Control Strategy
    - Broadkill River Tributary Action Team
    - Appoquinimink River Association Inland
    - Bays Tributary Action Team
    - Murderkill River Tributary Action Team
2. Continue to serve New Castle County government in the following capacity:
  - Water Resource Protection Area (WRPA) program - Serve on the RPATAC, and maintain WRPA mapping.
  - Land Development and Planning - Review subdivision/development plans for water impacts.
  - White Clay Creek Wild & Scenic River - Serve as local coordinator on its Watershed Management Committee.
  - Southern New Castle County – Provide technical assistance on water resources impacts of growth in the Middletown-Odessa-Townsend (MOT) area.

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 sanitary sewer system modeling
  - GIS mapping for source-water protection
4. Continue to serve the City of Wilmington with water resources technical assistance
  - Combined Sewer Overflow Abatement
  - Brandywine/Hoopers Reservoir/Red Clay Operating Plan
  - Brandywine Creek Source Water Protection Program

### **Future Steps**

- Expand water resources assistance to governments in Delaware's Kent and Sussex Counties, Pennsylvania, and New Jersey.
- Participate in funded partnerships with the Delaware River Basin and Delaware Estuary Program.
- Pursue niche areas such as migratory shad restoration, state of the watershed reports, water-quality trend analyses, and Nonpoint Education for Municipal Officials (NEMO).
- Utilize strength as the best GIS lab in the state to expand funded watershed-mapping projects.

## **GOAL #2 - ENHANCE THE QUALITY OF EDUCATION PROGRAMS**

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

### **Significance**

The goal to provide water resources–education opportunities at the University is significant to the SUAPP public policy–education mission. Education is a basic role of the University of Delaware. WRA strives to educate students who will assume future water resources positions with our government funding partners.

### **Challenges**

The challenge is to participate in water resources–education opportunities on-campus while maintaining its primary public service mission with our funding governments.

### **Action Steps**

1. Sponsor annual on-campus Delaware Water Policy Forum Series. 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
  - Green Opportunities for Blue Green Resource: An Economic Perspective (AWRA). Sep. 19-21, 2007
2. Teach water resources courses in School of Urban Affairs & Public Policy and College of Engineering:
  - UAPP 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 (Watershed Engineering, Planning, and Design), fall semester, 3 credits
3. Mentor students in the following roles:

- Continue to offer funded water resources fellowships to graduate students in the MPA or MA program.
  - Fund two 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 functions such as:
- University of Delaware Ag Field Day (Apr.)
  - Newark Community Day (Sep.)
  - University of Delaware Coast Day (Oct.)

### **Future Steps**

- Develop an Issues in Water Resources Planning course (1 credit).
- Create water resources–planning concentration in the SUAPP MPA program.
- Collaborate with other colleges and create an interdisciplinary water resources major.
- Develop a Pathways water resources course to be offered to freshmen.
- Develop a winter session abroad program in water resources.

## **GOAL #3 - 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.

### **Challenge**

The challenge will be to plan sufficient time to search for funding grants and carry out water-related research while maintaining a focus on WRA’s primary public service role.

### **Action Steps**

1. Continue to collaborate with Delaware Water Resources Center and UD Facilities Department on the University of Delaware Experimental Watershed as an on-campus education and research laboratory, through grants from the National Science Foundation.
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 privately and publicly funded grants.
6. Continue to fund the SUAPP Excellence in Water Resources Scholarship Medal presented annually at Honors Day.

## **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 USA and Canada.
- Watershed GIS modeling and restoration
- Impact of global warming on Delaware’s water resources
- Alternative energy sources at water supply and wastewater-treatment facilities
- Sustainable watershed funding and financing