

**Virginia Water Resources Research Center**  
**Strategic Plan 2022-2026**  
**28 July 2021**

## **Background**

The Virginia Water Resources Research Center (VWRRC) was established at Virginia Tech in 1965 under the federal Water Resources Research Act of 1964 and established in 1982 by the Virginia General Assembly under the *Code of Virginia* (§23.1-2628). All colleges and universities in the Commonwealth are served by the VWRRC. At the time of its establishment in 1965, the VWRRC had an oversight committee consisting of the Dean of Engineering, the Dean of Agriculture, and a University Vice President. In 1969, administrative oversight of the VWRRC was transferred to the newly formed Research Division. In 2005, administrative oversight was transferred to the College of Natural Resources (now known as the College of Natural Resources and Environment, CNRE). The VWRRC carries authorization from the U.S. Geological Survey (USGS), the Commonwealth of Virginia, and Virginia Tech.

## **Vision**

The VWRRC will utilize its programs in discovery, learning, and engagement to advance and sustain the wise use and management of our water resources.

## **Mission Background**

The *Code of Virginia* establishes the VWRRC's **purpose**:

"to develop, implement, and coordinate water and related land research programs in the Commonwealth and transfer the results of research and new technology to potential users. The Water Center shall be located at [Virginia Tech]."

The *Code of Virginia* also establishes the VWRRC's **functions, powers, and duties**:

- Consult with the General Assembly; federal, state, and local agencies; water user groups; private industry; and other potential users of research;
- Establish and administer agreements with other public institutions of higher education and private institutions of higher education to conduct research projects;
- Disseminate new information and facilitate the transfer and application of new technology;
- Be a liaison between the Commonwealth and the federal research funding agencies and advocate for the Commonwealth's water research needs;

- Encourage the development of academic programs in water resources management in conjunction with the State Council on Higher Education for Virginia.

In addition, the *Code of Virginia* states that the VWRRC shall facilitate and stimulate research that:

- Deals with policy issues facing the General Assembly;
- Supports the state water resources agencies;
- Provides water planning and management organizations with tools to increase efficiency and effectiveness of water planning and management.

### **Mission Statement**

The VWRRC provides research and educational opportunities to future water scientists, promotes research on practical solutions to water resources problems, and facilitates timely transfer of water resources information to policy- and decision-makers and the general public.

### **Guiding Principles and Values to Fulfill Our Mission and to Realize Our Vision**

- Excellence in all activities and programs;
- Statewide, multi-institutional, multidisciplinary;
- Collaborative – seeking and welcoming partnerships with government, industry, non-governmental organizations, and other appropriate partners;
- Integrated and focused;
- Science-based, objective information for policy development and for public and private decision making;
- Global context;
- Work environment that values the benefits of diverse ideas, peoples, and cultures;
- Respect and sensitivity for people without regard to age, color, disability, gender, gender identity, gender expression, genetic information, national origin, political affiliation, race, religion, sexual orientation, veteran status, or any other basis protected by law.

## Current Programs

- Discovery/Research
  - Supports student research on water issues and challenges in Virginia and the region through the VWRRC Competitive Student Seed Grant Program;
  - Facilitates interdisciplinary, multi-institute, collaborative research proposals;
  - Conducts in-house research with the help of VWRRC faculty and staff;
  - Coordinates water resources research efforts as requested by government agencies and other non-government partners.
  
- Learning
  - Teaches various water-related courses at Virginia Tech;
  - Coordinates the following educational programs at Virginia Tech:
    - Water: Resources, Policy, and Management B.S. degree for undergraduates,
    - Watershed Management Minor for undergraduates,
    - Blue Planet Pathways Minor for undergraduates, and
    - Watershed Management Certificate for graduate students;
  - Awards William R. Walker Endowed Graduate Research Fellowship to:
    - Individuals pursuing graduate work in a field other than their area of emphasis as an undergraduate, or
    - Individuals with work experience returning to graduate school and who want to enter a water-related profession;
  - Awards one or two semester-long VWRRC undergraduate internship(s) each year to work with VWRRC faculty and staff;
  - Offers undergraduate support and graduate research assistantships to students participating in sponsored research under supervision of VWRRC faculty and staff;
  - Facilitates USGS Water Resources Research Institutes (WRRI) Student Internship program in Virginia when USGS funds and appropriate research projects are available;
  - Advises the Virginia Tech student chapter of American Water Resources Association (AWRA).

- Outreach/Engagement

- Promotes water resources activities at Virginia Tech;
- Functions as administrative home for the Virginia Water Monitoring Council (VWMC; the VWMC promotes and facilitates communication among water-monitoring programs throughout Virginia);
- Leads the multi-institute Academic Advisory Committee to the Virginia Department of Environmental Quality (DEQ);
- Connects stakeholders with water resources expertise;
- Provides timely water resources information through *Virginia Water Radio*, News Grouper Blog, Virginia Water Legislation Inventory, website, social media (Twitter, Facebook), and the VWMC weekly email updates of water news, events, and career opportunities;
- Hosts and maintains, in partnership with the DEQ, the Virginia Stormwater Best Management Practice (BMP) Clearinghouse (serves as the Commonwealth's reference site for stormwater BMPs for use in complying with Virginia stormwater management law and regulations);
- Organizes state and regional water conferences;
- Coordinates and sponsors water seminars;
- Maintains, in partnership with DEQ, the Virginia Water Educators Directory (a searchable online directory of trained water educators that aims to connect water educators and teachers in Virginia for conducting Meaningful Watershed Educational Experiences, MWEEs);
- Coordinates Virginia's Waters Photo Contest for college and university students across the Commonwealth.

## **Vision for the Next Two Years: 2022–2023**

*Goal 1:* Maintain programs in discovery/research, learning, and outreach/engagement.

*Goal 2:* Enhance programs in discovery/research, learning, and outreach/engagement.

- Discovery/Research:
  - Expand role as a facilitator of water resources research by hosting Agency-Researcher Summit;
- Learning:
  - Develop, in partnership with the Virginia Tech Graduate School, CNRE, and other Virginia Tech colleges, Water Degree Programs for graduate students (M.S. and Ph.D.);
- Outreach/Engagement:
  - Meet annually with Virginia Secretary of Natural and Historical Resources, Virginia Secretary of Agriculture and Forestry, state agency (e.g., Department of Environmental Quality, Department of Conservation and Recreation, Department of Forestry) leadership, state agency Division Heads, state legislators, and water-focused commissions to share perspectives on current and emerging water challenges and to promote the role of the VWRRC to help meet the challenges.

*Goal 3:* Increase representational diversity and inclusiveness.

- Increase cultural competency of faculty and staff by participating in diversity/equity/inclusivity competency training modules;
- Recruit and retain faculty, staff, and students from diverse backgrounds, cultures, perspectives, and identities;
- Offer a scholarship(s) for underrepresented minority students enrolled in water-related majors within the Commonwealth.

*Goal 4:* Develop a reliable, stable, long-term funding source and administrative support that allows the VWRRC to achieve its program goals.

- Improve base funding from Virginia Tech and the state legislature to expand research granting program (goal of \$100,000 in two years) and expand VWRRC staff (goal of adding 1 more in two years) to more effectively meet our mission;
- Access increased external funding to support expansion of VWRRC activities;
- Increase funding from federal government to expand research granting program;

- Plan for administration changes as needed to meet vision goals and in anticipation of faculty/staff retirements.

## **Vision for the Next Five Years: 2022–2026**

*Goal 1:* Strengthen and expand programs in discovery/research, learning, and outreach/engagement.

- Discovery/Research:
  - Strengthen current discovery programs of the VWRRC;
  - Expand role as a facilitator of water resources research through enhanced collaborations:
    - Strengthen and expand collaborations with the General Assembly, state and federal agencies, water user groups, private industry, and other potential users of water resources research;
    - Expand multidisciplinary, multi-institutional water resources faculty collaborations for optimal response to state, regional, national, and global water issues;
    - Facilitate communications between higher education researchers and state and federal agencies through Agency-Researcher Summit;
  - Facilitate innovative approaches to solving water resources challenges.
  
- Learning:
  - Strengthen current learning programs of the VWRRC;
  - Expand role as coordinating center for water curricular activities at Virginia Tech;
  - Develop, in partnership with the Virginia Tech Graduate School, CNRE, and other Virginia Tech colleges, Water Degree Programs for graduate students (M.S. and Ph.D.);
  - Initiate an online water-resources certificate program that targets mid-career professionals.
  
- Outreach/Engagement:
  - Increase effectiveness of current engagement programs of the VWRRC;
  - Facilitate enhanced communications with and coordination of people interested in water resources;
  - Increase hosting of virtual, in-person, and/or hybrid water research seminars and conferences;

- Enhance information sharing with potential employers regarding water-related major and minor programs at Virginia Tech and institutions of higher learning throughout the Commonwealth;
- Work with environmental educator positions (once established) within the Department of Education and/or other state agencies to enhance and promote water educational programs;
- Utilize nationwide network of expertise through the National Institutes for Water Resources (NIWR) program to address water resource challenges.

*Goal 2:* Be widely recognized for services in water-resources discovery, learning, and engagement.

- Increase visibility of the VWRRC throughout the Commonwealth, the region, and the nation;
- Maintain recognition as one of the nation's outstanding water resources programs from the USGS review panel.

*Goal 3:* Increase representational diversity and inclusiveness.

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## **Key Performance Indicators**

- Number of courses taught;
- Number of discovery/research, learning, outreach/engagement collaborations;
- Number of research and outreach publications;
- Number and demographics of students/post docs supported by research funding and scholarships;
- Number of presentations at professional meetings/invited lectures;
- Number of collaborations with water resources stakeholders, including agencies, commissions, non-government organizations, private industry, and other water resources institutions;
- Number of events held in collaboration with partners;
- Records or other indicators of access and use of new water information by policy makers, water managers, and the general public;
- Amount of funding for water resources discovery/research, learning, and outreach/engagement brought into the VWRRC from public and private sources;
- Outcome of five-year reviews of performance conducted by USGS.

## **Essential Elements to Help Achieve the Vision**

- Meet annually with Virginia Secretary of Natural and Historical Resources, Virginia Secretary of Agriculture and Forestry, state agency (e.g., Department of Environmental Quality, Department of Conservation and Recreation, Department of Forestry) leadership, state agency Division Heads, state legislators, legislative staff, and water-focused commissions to share perspectives on current and emerging water challenges and to promote the role of the VWRRC to help meet the challenges;
- Enhance support for providing our competitive grants program (currently \$20,000-30,000/yr; increase to \$200,000-300,000/yr within 5-year plan);
- Enhance support to expand VWRRC staffing (currently 2.0 faculty FTE and 1.0 staff FTE from state);
- Gain support from development efforts to establish and expand endowment funding.

**Virginia Water Resources Research Center**  
**Organizational Chart**  
28 July 2021

