

JEFFREY A. HUGHES

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EDUCATION

University of North Carolina School of Public Health, Chapel Hill, NC,
Master of Science in Environmental Engineering, Water Resources Engineering and Economics,
May 1992

Duke University School of Engineering, Durham, NC,
Bachelor of Science in Engineering, Focus on Energy, January 1985

PROFESSIONAL EXPERIENCE

<i>Director of the Environmental Finance Center</i>	2003-Present
University of North Carolina at Chapel Hill, Chapel Hill, NC	
<i>Lecturer, School of Government</i>	2008 –Present
University of North Carolina at Chapel Hill, Chapel Hill, NC	
<i>Associate Director of the Environmental Finance Center</i>	2001-2003
University of North Carolina at Chapel Hill Chapel Hill, NC	
<i>Environmental Finance Specialist</i>	2000-2003
RTI International, Research Triangle Park, NC	
<i>Senior Water Policy Advisor</i>	1999- 2000
RTI International, Warsaw, Poland	
<i>Director of Public Works</i>	1996-1999
Chatham County Government, Chatham County, NC	

RELEVANT PUBLICATIONS

Third Party Review of Water System Development Charges

Author: Jeff Hughes

Publication: Report for the South Dakota Department of the Environment. March 2015

A detailed review of the process that was used to calculate System Development Charges for South Falls, Dakota.

An Assessment of PACE Local Government Financing Issues in Three States

Authors: Jeff Hughes and Adam Parker

Publication: Environmental Finance Center Report. August 2013.

A white paper that considers differences of PACE assessment programs in GA, NC, and FL.

Report on Options for Incorporating Sustainability into Investment Practices

Authors: Jeff Hughes, Carol Hee, Scott Ragland, Cindy Shea

Report for the UNC Chapel Hill Sustainability Advisory Committee. September 2014.

A report that presents socially responsible investment options..

Methods and Strategies for Financing Green Infrastructure

Author: Jeff Hughes

Publication: Environmental Finance Center Report. October 2014

Identifies and describes the key components of financing mechanisms available to support green infrastructure investments.

Money Matters – Should Water Providers Hedge Weather Risk?

Authors: Jeff Hughes, Matthew Coleman, Sharlene Leurig

Publication: Journal AWWA. January 2015

An article that describes how water providers may be able to manage natural revenue volatility caused by weather events by using weather risk transfer contracts to offset utility revenue loss.

Measuring and Mitigating Water Revenue Variability: Understanding How Pricing Can Advance Conservation without Undermining Utilities' Revenue Goals

Authors: Jeff Hughes, Shadi Eskaf, Mary Tiger, Katie Bradshaw, Sharlene Leurig

Publication: A Ceres Report. July 2014

This report examines real financial and water use data from three North American water utilities to demonstrate how rate structures can mitigate or intensify revenue variability.

Institutional Models for Sharing Water Resource Protection Costs among Multiple Partners

Author: Jeff Hughes

Publication: Environmental Finance Center Report. May 2014

This report identifies examples of existing water resource programs that rely on some type of multi-jurisdiction partnership or institutional model within or nearby the Upper Neuse River Basin.

Annual Report of Water and Wastewater Service Pricing in Arizona 2014

Authors: Jeff Hughes, David Tucker

Publication: Environmental Finance Center Report. October 2014

A report that details the results of a statewide survey of water and wastewater rates in Arizona to support utility financial management and pricing efforts.

Identifying Revenue Sources for Land Conservation to Protect Drinking Water

Author: Jeff Hughes, Jon Breece, Lauren Patterson, Chris Kenrick

Publication: Environmental Finance Center Report. May 2014

An analysis of how local governments in North Carolina's Upper Neuse River Basin can cooperatively generate a sustainable revenue stream to implement watershed protection strategies.

Borrowing for the Big Stuff: Overview of Local Government Water and Wastewater Debt in North Carolina

Authors: Jeff Hughes, Sarah Royster

A report that describes trends among local government utilities in North Carolina to better understand current practices in the context of the growing infrastructure needs.

Designing Water Rate Structures for Conservation and Revenue Stability

Authors: Jeff Hughes, Mary Tiger, Shadi Eskaf

Publication: Report for the Sierra Club Lonestar Chapter and the Texas Living Waters Project. February 2014.

A report that guides Texas water utilities in using water rates and financial policies to encourage customers to reduce their water use while maintaining the financial viability of the utility.

Financing Sustainable Energy Projects at Small Liberal Arts Colleges

Authors: Jeff Hughes, Jen Weiss

Publication: Guide for the Jessie Ball Dupont Fund. February 2014.

A guide that outlines the four key steps necessary for investment into sustainable energy projects for small liberal arts colleges.

Defining a Resilient Business Model for Water Utilities

Authors: Jeff Hughes, Peiffer Brandt, Mary Tiger, Shadi Eskaf, and Stacey Berahzer.

Publication: Water Research Foundation Report #4366. January 2014.

A large-scale quantitative analysis of the current revenue reality of water utilities and strategies for revenue resiliency.

Water Fund Finance and Governance Mechanisms

Author: Jeff Hughes

Publication: Implementation report for The Nature Conservancy January 2014

A policy options report submitted to the Nature Conservancy outlining institutional options for developing a multi-party water fund.

Steering Innovation in Water Utility Finance and Management: A Water Research Foundation Leadership Forum

Authors: Jeff Hughes and Mary Tiger

Publication: Water Research Foundation Report #4506. October 2013.

A discussion of innovation in finance and management strategies in the water industry around 10 predicted trends.

Assessing Water System Revenue Risk: Considerations for Market Analysts

Authors: Jeff Hughes and Sharlene Leurig

Publication: A Ceres report. August 2013.

Investigation of capital funding in the water industry on the brink of extraordinary investments.

Communicating Revenuesheds: A User Guide

Authors: Jeff Hughes, Glenn Barnes, Mary Tiger, Christine Boyle, Lauren Patterson, Jordan McMillian, Jon Breece

Publication: Environmental Finance Center Report. August 2012.

A tool for educators, civic leaders, land trusts, and other stakeholders in watershed protection that introduces the revenueshed concept to communities.

Evolving Local Government Roles in Community Energy Management

Authors: Jeff Hughes and Erin Riggs

Publication: Environmental Finance Center Report. May 2012.

A report that examines the roles, financing options, and models available to local governments in North Carolina interested in providing distributed energy services to their citizens.

How to Look Forward Without Looking Back: Innovative Approaches to Forecasting Green Finance Program Demand

Authors: Christine Boyle, Michael Chasnow, Jeff Hughes

Publication: Journal of Sustainable Real Estate. December 2011.

A paper that develops a new methodology for assessing potential residential demand for EERE financing products.

Implications of Residential Irrigation Metering for Customers' Expenditures and Demand

Authors: Mary Wyatt Tiger, Shadi Eskaf, and Jeff Hughes

Publication: Journal AWWA, Volume 103, Issue 12, pages 30-41. December 2011.

Exploration of the financial and water use implications of separately metering and billing residential irrigation water under existing utility practices.

Mining Water Billing Data to Inform Policy and Communication Strategies

Authors: Christine E. Boyle, Shadi Eskaf, Mary Wyatt Tiger, and Jeff Hughes

Publication: Journal AWWA, Volume 103, Issue 11, pages 45-58. November 2011

An introduction and application of a methodology and framework for analyzing customer use patterns for policy and communication strategies.

Options for Raising Capital for Residential Energy Loan Programs

Author: Jeff Hughes

Publication: A report for the US DOE and Oak ridge National Laboratory. April 2011

This document outlines capital leveraging models and examples from across the country in which public funds were used to influence energy loan program capital.

Cost Plus: Estimating Real Determinants of Water and Sewer Bills

Authors: Jeff Hughes, Shadi Eskaf, Rich Thorsten

Publication: Public Works Mgmt & Policy, Volume 13.3, on pages 224-238. December 2008.

A publication that tests the importance of cost, demand, institutional, and geographic factors on the bills that consumers pay for water and sewer service in North Carolina and the pricing signals that utilities send to customers.

The Painful Art of Setting Water and Sewer Rates

Author: Jeff Hughes

Publication: Popular Government, Volume 70, No. 3, Spring/Summer 2005.

An article that reviews the principles behind the water revenues that keep utilities in business.

EXAMPLES OF SERVICE

Environmental Finance Center Network. President (2014)

Water Research Foundation Finance Advisory Committee. Member of committee setting research agenda for leading industry water research foundation. (2013 to Present)

Southeast Energy Efficiency Alliance Board of Directors. Member. (2012 to Present)

UNC Campus Sustainability Advisory Committee. Committee charged with advising Senior Management on sustainability issues. (2010 to Present)

UNC System Energy Finance Work Group. Task force lead charged with investigating energy finance tools to support 16 campus state system energy programs and services. (2012 to 2013)

USEPA Environmental Finance Advisory Board. Expert witness to board charged with providing environmental finance advice to EPA and EPA administrator. (2003 to Present)

Dean's Advisory Committee. Committee charged with advising Dean of School of Government on strategic planning matters. (2008 to 2011)

The Aspen Institute Energy and Environment Program. Expert dialogue participant in discussion on "Sustainable Water Systems." (2008 – 2009)

Environmental Finance Center Network. Network of 9 university applied research and community outreach centers. President (2008), Vice-President (2007) and Secretary (2006).

North Carolina Water Treatment Facility Certification Board. Governor-appointee to state certification board. Vice –Chairman (2007). (2005 to 2011)

Water 2030 Technical Advisory Board. Member of technical advisory committee carrying out comprehensive statewide utility planning effort. (2005 to 2006)

AWWA Finance and Management Committee. Active member of committee charged with developing financial management programs for members. (2004 to 2009)

RELEVANT PRESENTATIONS, TEACHING, AND EDUCATION PROGRAMS

Financing Energy Efficiency: Best Practices for energy-Efficient Multifamily Properties. Presented innovative approaches to financing energy-efficient upgrades in multifamily properties and financing models and best practices that are being used around the nation. April 2015.

Water, Cities & Business Panel, Value of Water Round Table. Served as a panelist during sessions on financing climate adaptation projects in the US and the value of water, pricing, and revenue strategies at US utilities. October 2014.

Meeting the New Kid on the Block: Tips for Incorporating Stormwater Lending into your Portfolio. Discussed developments in the stormwater finance world including revenue trends and creative approaches to structuring stormwater loans. November 2014.

NC House Committee on Public Enterprise Systems and Use of Funds. Presented an overview of public enterprises in North Carolina to the House Committee on Public Enterprise Systems and Use of Funds. The presentation focused on water and wastewater public enterprises. March 2014.

Duke Energy Progress Outdoor Lighting Forum. Led a discussion that focuses on outdoor

LED lighting financing options as well as financial issues that impact a local government's LED lighting strategy. March 2014.

Utility Management Conference: Workshop on Communicating Financial Information. Co-organizer and facilitator for workshop focusing on communicating water financial information to governing boards. February 2014.

Central Texas Water Efficiency Network Water Utility Rates and Revenue Workshop. Co-organizer of workshop for Texas water utilities. November 2011.

Association of Metropolitan Water Agencies Annual Conference. Plenary Speaker on Utility Financial Resilience. October 2013

School of Government Solid Waste Finance Course. Organized and served as instructor in multiday course focused on best practices and techniques for managing costs and raising revenue for solid waste management. October 2013

Watershed Finance: Models, Challenges, and Opportunities. Partnered with the Conservation Trust for North Carolina to discuss alternative finance and cost sharing models available to communities in NC to protect water quality. September 2013.

Jordan Lake Regional Water Supply Partnership Watershed Cost Sharing Workshop. Led a discussion to gather input and ideas on how local governments can join forces to collect, distribute, and spend financial resources to meet shared multi-community goals. September 2013.

Financing Sustainable Energy Projects: Intersection of Policy and Finance Panel. Ninth Annual Sustainable Energy Conference, April 19, 2012, Raleigh, NC.

Financing and Implementing Energy Efficiency Initiatives: A Project-based Workshop. NC Department of Commerce Project Energy Conservation, March 7, 2012, Raleigh, NC. A project based, one day course on the finance and implementation of energy projects tailored to the Community Development Division scale, focusing on projects that staff might initiate or encounter in their own communities.

Annual Council of Infrastructure Authorities Conference. Session organizer and lead presenter for series of sessions at annual conference from 2006 to 2014.

Water and Wastewater Leadership Center. Responsible for the utility finance component of a day-long educational event as part of Executive Education Program Kenan-Flagler Business School on behalf of National Association of Clean Water Agencies, American Water Works Association, Association of Metropolitan Water Agencies, and Water Environment Federation. Chapel Hill, NC. Every year 2006 – 2015.

School of Government Water and Wastewater Finance Workshop. Lead organizer and instructor for annual water and wastewater infrastructure funding strategies workshop, providing utility practitioners with new skills and up-to-date information on infrastructure finance planning strategies and funding resources. Every year 2007 – 2015.

School of Government Financial Leadership for Water Utility Governing Boards. Lead organizer and instructor for financial training program aimed at governing board members. Ten separate half-day programs attended by representatives from 18 local governments over two-year period. 2005-2006. 2013.

UNC Graduate Course: Applied Environmental Finance. Fall 2006. Spring 2010. Spring 2013. Summer 2014 (in Ecuador). Spring 2015