

Paying for Nutrient Reduction and Management in Jordan Lake

JLOWA Meeting

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Chapel Hill, NC

Erin Riggs, Jeff Hughes

Evan Kirk, Tori Molyneaux



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Supporting the fair, effective, and financially sustainable delivery of environmental programs through:

- Applied Research
- Teaching and Outreach
- Program Design and Evaluation



How you pay for it matters

Overarching Legislative Directives

- “review the costs and benefits of existing nutrient management strategies”
- “maintain proven measures already shown to be effective; incorporate new technological and management innovations; recognize investments in water quality already implemented by stakeholders; and share costs on an *equitable basis*”

General Findings

- Key factors working against collaborative watershed management:
 - Fragmentation in spending and revenue generation
 - Lack of cross-sector communication about costs/spending
 - Perceived ambiguities in current regulatory framework
 - Cautionary approach to voluntary spending where rules currently not in effect

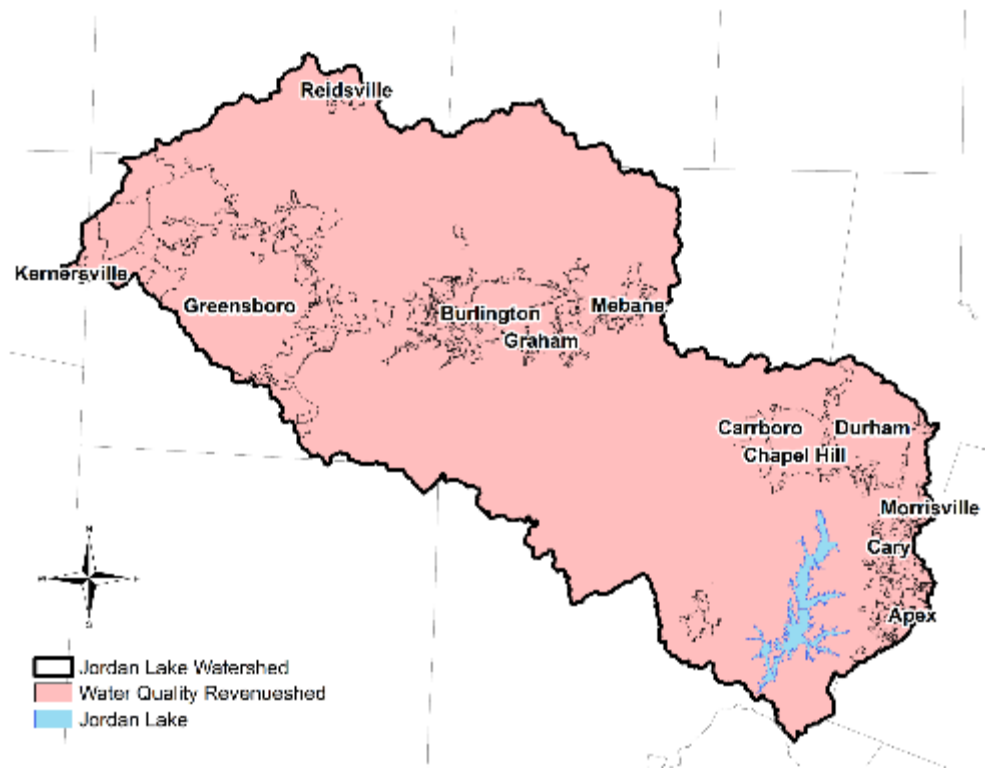
General Findings

- Existing Revenue Generating Sources which may be underutilized:
 - Stormwater fees – currently in place in 11 jurisdictions in JL watershed
 - Property Tax
 - Sales Tax
 - New Municipal Stormwater Service District Tax
 - Business Improvement District Tax
 - New County Watershed Improvement District Tax
 - New County Special Services District Tax
 - Watershed Protection Utility Fee – i.e. City of Raleigh fee which helps fund UNCWI
 - Non-designated water or wastewater utility customer charges
 - Property Assessments

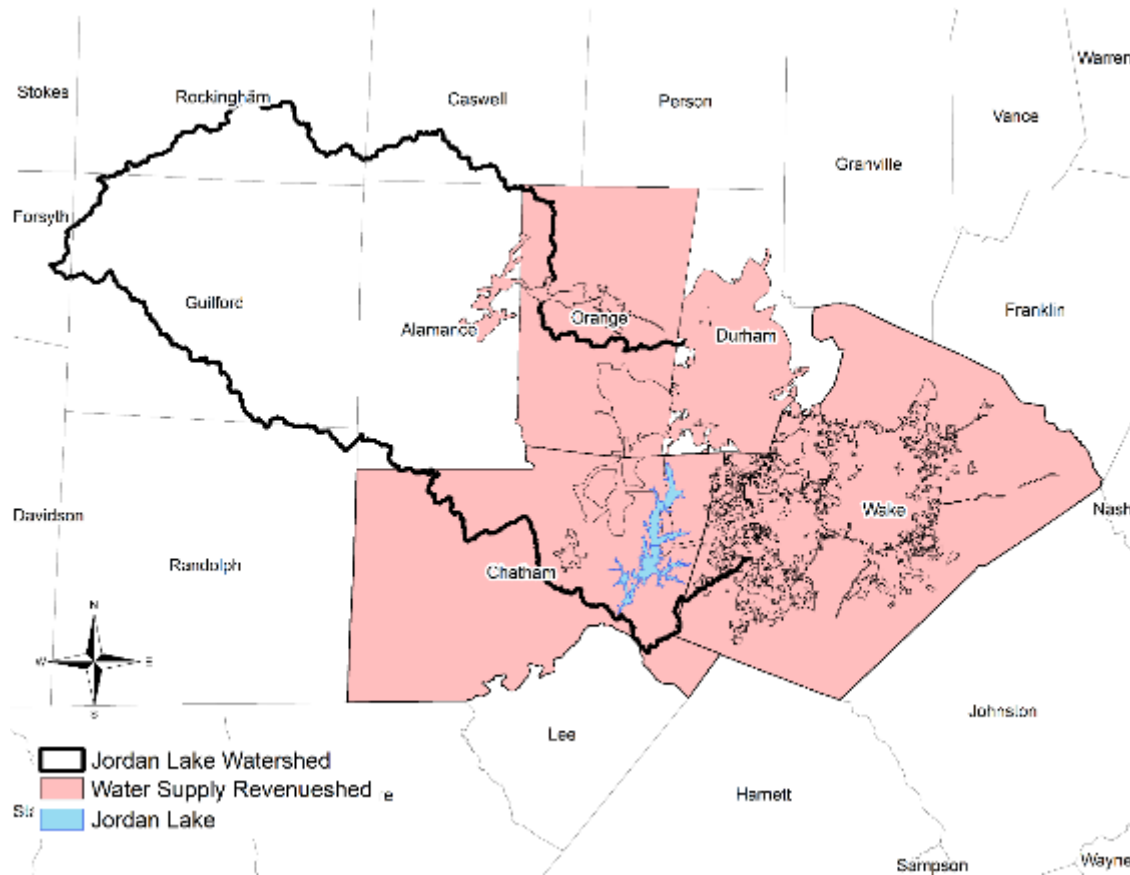
What is a Revenueshed?

- Our defined concept of a **WATER QUALITY REVENUESHED** identifies the area within which revenue is generated for watershed protection. This framework can be used for multiple purposes including:
 - To cultivate accountability
 - To generate discussions among local governments
 - To develop interactive financial tools to assist in policy-making

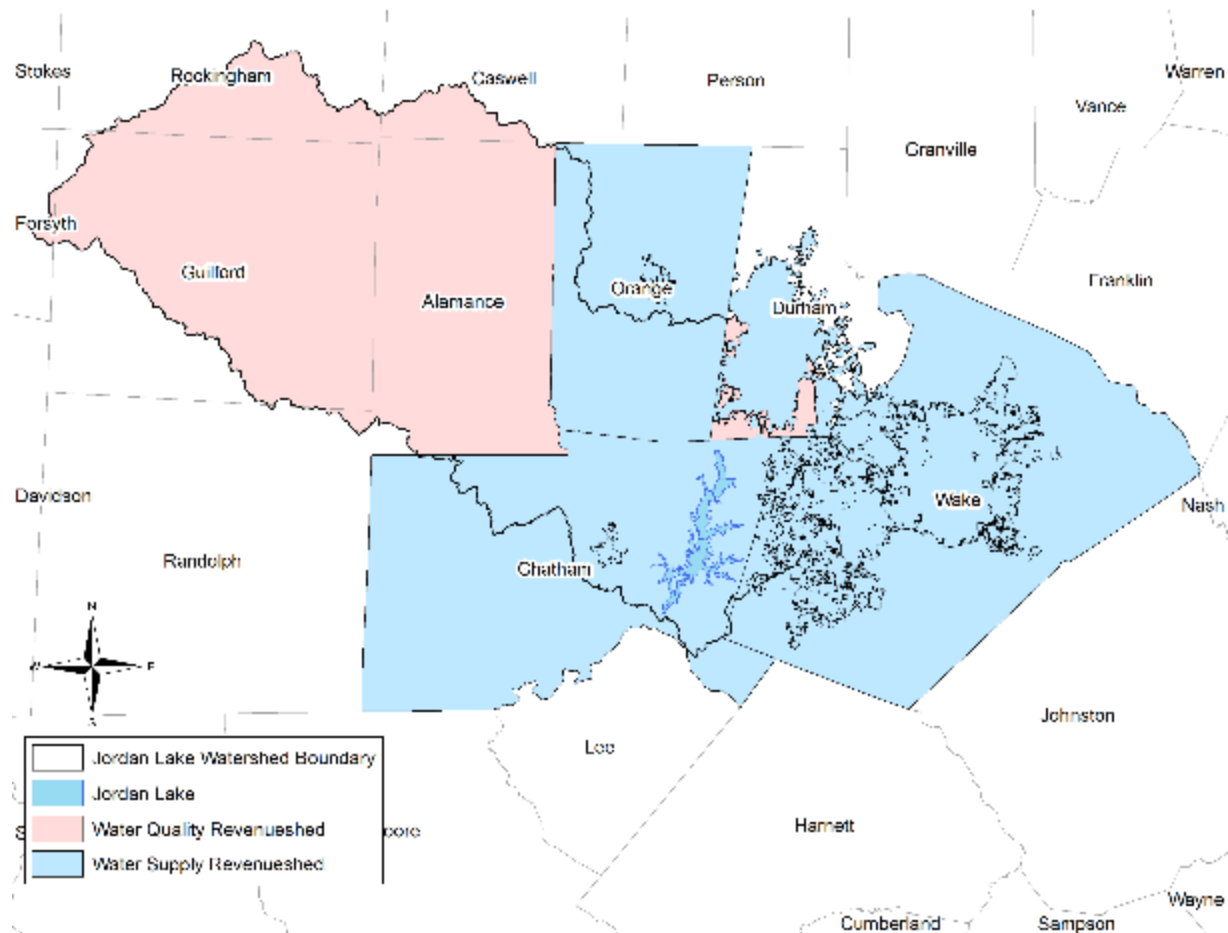
Watershed Drainage Basin Revenuedshed



Water Supply Revenued



Comprehensive Water Quality Protection Revenueshed



Water Utility Service and Revenues

	Watershed Drainage Revenued	Water Supply Revenued	Comprehensive Water Quality Protection Revenued*
Service Population	689,399	1,193,535	1,547,763
Water/Sewer Operating Revenue	\$289,733,463	\$497,976,880	\$655,060,337
*Accounts for Duplicates in Service Population and Estimated Revenue in Watershed			

Property Tax

	Watershed Drainage Revenueshed	Water Supply Revenueshed	Comprehensive Water Quality Protection Revenueshed*
Population	853,164	1,458,922	2,200,242
Property Tax Revenues	\$993,003,834	\$1,552,802,234	\$2,210,979,836
*Accounts for Duplicates in Service Population and Estimated Revenue in Watershed			

Jordan Lake Revenueshed Model

Jordan Lake Revenueshed Model



Existing Potential For Revenue Generation Based on 2017 Tax Rates and 2018 Water, Wastewater, and Stormwater Rates

Revenue Source	Raise	Amount	Money Raised by Watershed		
			Water Quality	Water Supply	Total Revenueshed
Property Taxes			\$ -	\$ -	\$ -
Residential Water Rates	Base Charge	\$1.00	\$ 2,742,190.32	\$ 4,430,580.00	\$ 5,925,573.96
Commercial Water Rates	Base Charge	\$1.00	\$ 203,778.36	\$ 332,688.00	\$ 459,433.92
Residential Wastewater Rates			\$ -	\$ -	\$ -
Commercial Wastewater Rates			\$ -	\$ -	\$ -
Residential Stormwater Rates			\$ -	\$ -	\$ -
Non-residential Stormwater Rates			\$ -	\$ -	\$ -
Sales Tax*			\$ -		\$ -
Recreation Fees**					
Total Annual Revenue			\$ 2,945,968.68	\$ 4,763,268.00	\$ 6,385,007.88

Ongoing Research Questions

- Is it best to base a finance model on a big number or on the funds that are available?
- When putting together a finance model, how should the costs be spread across the various jurisdictions?
- Does it make sense to finance such a model by going to a jurisdiction (Town of Chapel Hill pays X amount), or by reaching the individual residents (the residents of Chapel Hill all pay a fee directly to the central authority)?

Ongoing Research Questions

- How is affordability taken into consideration and how are lower income populations in the watershed protected?
- Once funds are pooled, how can they be spent in a way that spreads the co-benefits across the watershed?
- What are the various fee structures that could be used in this scenario, and how much revenue could each generate?

Overarching Legislative Directives

- “examine the costs and benefits of basinwide nutrient strategies in **other states** and the impact (or lack of impact) those strategies have had on water quality.”



	California	Iowa	Minnesota	Washington
Alternative Purposes	Water + habitat conservation, flood control	Flood mitigation	Flood mitigation, water supply, public health	Water rights, instream flows for fish
Qualifying Political Subdivisions	Any in Santa Ana Watershed	City, county, soil and water conservation district, water quality district	County, town, school district, or political division or subdivision of the state	County, city, utility
Minimum Consent for Creation	N/A; created by state	Two political subdivisions	Majority of political subdivisions, by population or number	All counties, largest city, largest utility
Voluntary	Yes	Yes	No	Yes
Financial Burden	State and Federal	State and political jurisdictions	Counties	State and political jurisdictions
Financing Mechanisms	Water Bond finances state grants	State appropriations; Grants; Individual fundraising	Ad valorem taxes	State appropriations; Some individual fundraising

Southern California Integrated Watershed Program

- One watershed
- Competitive grant applications for state bond fund
- Jurisdictions run own projects



Iowa Watershed Management Authorities



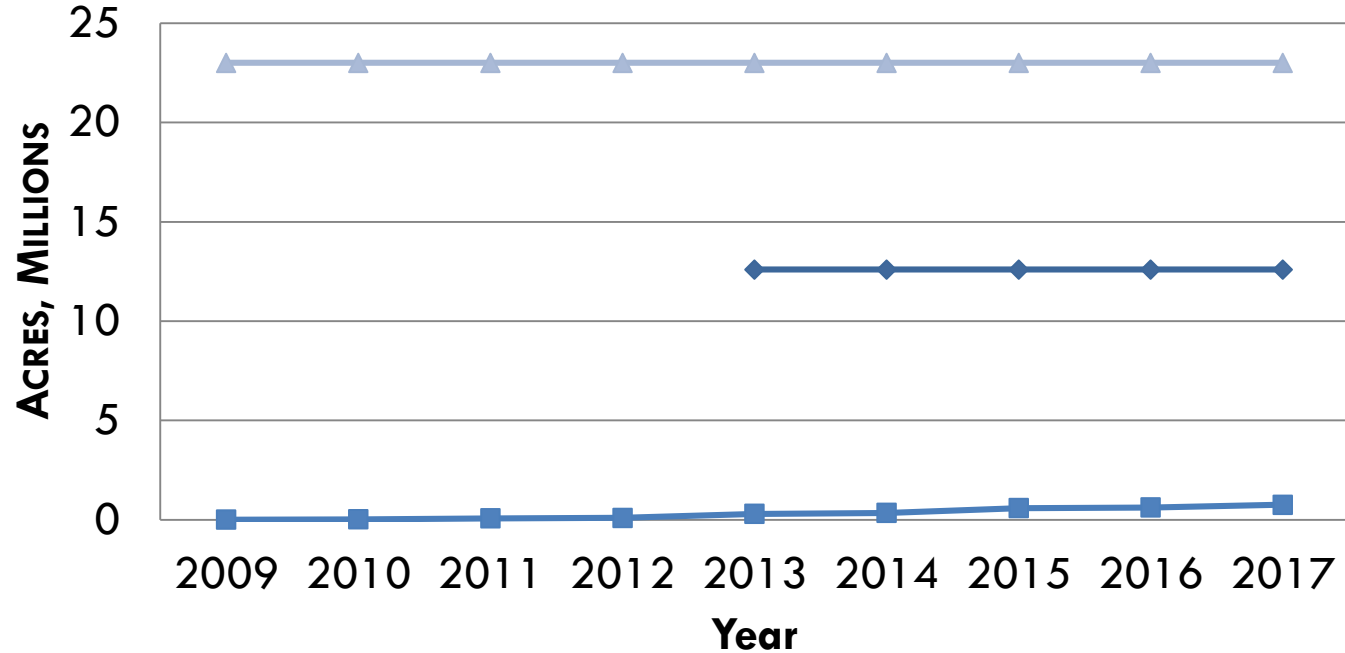
- Intergovernmental Agreements
- Minimum two political subdivisions for creation
 - Others must be invited but not required to join
- State appropriates initial funding

WMA Administration

- Large agricultural sector dislikes regulation
- Most focus on flood mitigation
- Little authority granted to WMAs
 - Projects require cooperation
 - Focus on education and voluntarily implementation
 - E.g. 600,000 acres cover crop out of 23+ million acres row crop

Cover Crops in Iowa

Nutrient Reduction Strategy Goal



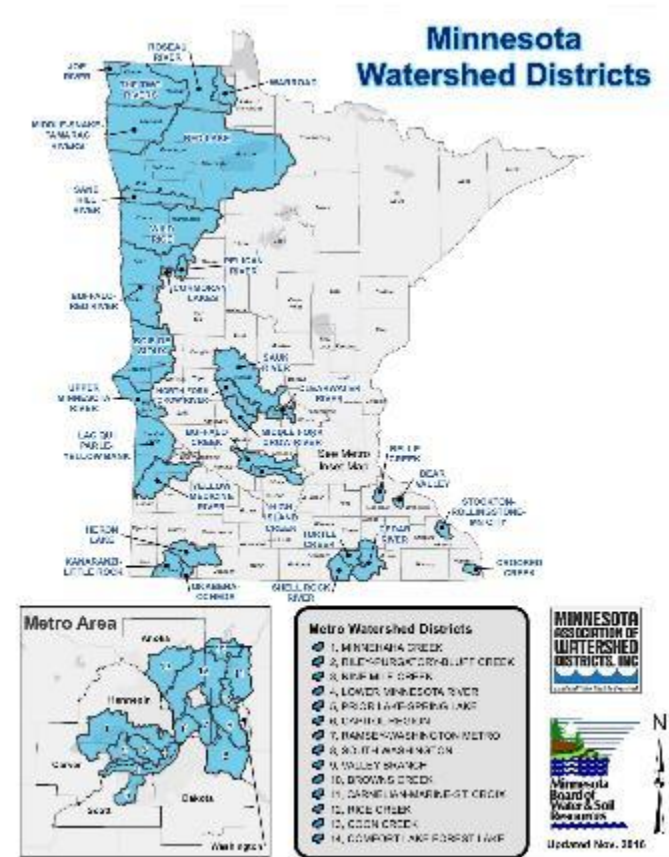
◆ Nutrient Reduction Study Goal ■ Cover Crop Acreage ▲ Row Crop Acreage

WMA Funding

- No independent taxing authority
 - Taxation done by individual members voluntarily
 - Only 2 self-funded WMAs
- Reliant on grants and voluntary landowner cooperation
- Little state appropriated funding
 - Primarily for formation
- Outside funding helps to reduce upstream/downstream equity conflicts

Minnesota Watershed Districts

- Consent from majority of political subdivisions
 - Population
 - Number of political subdivisions
- Counties levy ad valorem taxes
- Relative net tax capacity

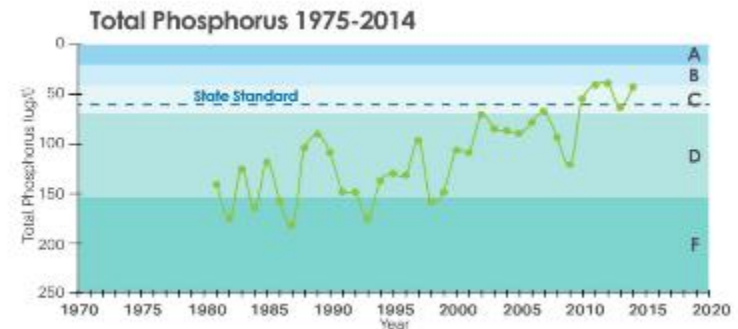


Watershed District Administration

- Focus solely on water quality and flood mitigation
 - Not swayed by economic development, other land use issues, etc.
 - Appreciated due to strong water ethic in MN
- Model presents few challenges
 - Easily adaptable to differently-sized districts
 - Work independently from the state
- Permitting authority but no land-use authority

Kohlman Lake Water Quality Restoration

- 10 year TMDL project
 - Managing phosphorus and chlorophyll levels
 - Vegetation management and upstream projects
- Delisted as Impaired Water

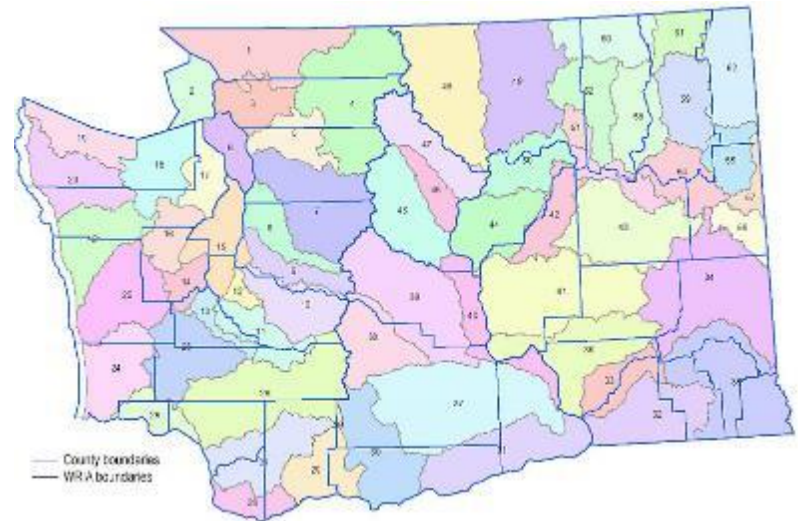


Watershed District Funding

- Have taxing authority
- Funding primarily comes from property taxes
 - Done by county
 - County contributions limited to relative net tax capacity
 - Harder for rural districts to raise funds this way
- Assessments against abutting properties for individual projects

Washington State's Watershed Planning Act

- Water Resource Inventory Area (WRIA) planning units
- Minimum consent per WRIA:
 - Every county
 - Largest city
 - Largest water supply utility
- State appropriated funds
- Local jurisdictions have authority to fundraise



Maryland's Bay Restoration Fund

- Flat fee of \$60/year charged to landowners in watershed
- Two funding pools
 - Wastewater treatment plant upgrades
 - Onsite sewage disposal system upgrades
- Generates ~\$100 million annually



LA County Stormwater Parcel Tax

- Ballot Measure put forth the following question for voters:
- Shall an ordinance improving/protecting water quality; capturing rain/stormwater to increase safe drinking water supplies and prepare for future drought; protecting public health and marine life by reducing pollution, trash, toxins/plastics entering Los Angeles County waterways/bays/beaches; establishing a parcel tax of 2.5¢ per square foot of impermeable area, exempting low-income seniors, raising approximately \$300,000,000 annually until ended by voters, requiring independent audits, oversight and local control be adopted?
- Passed in November – 67% (had to be at least 66%)

Environmental Finance Center at the University of North Carolina
School of Government, Knapp-Sanders Building
CB #3330
Chapel Hill, NC 27599-3330
USA



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