Smart Management for Small Water Systems

Leveraging Regional Development Organizations to Support Small Water Systems

Tuesday, January 26, 2021
2:00-3:00pm EST

NADO
NATIONAL ASSOCIATION OF DEVELOPMENT ORGANIZATIONS

Government Finance Officers Association

Environmental Finance Center
Syracuse University

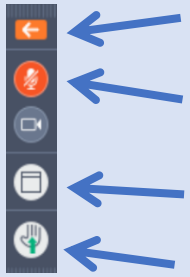
This program is made possible under a cooperative agreement with EPA.

Smart Management for Small Water Systems

EFCN
environmental finance center network

Logistics

Opening the control panel



Show your control panel

All phones/microphones are muted for the duration of the webinar

Toggle between full screen/window screen view

Raise Hand Feature

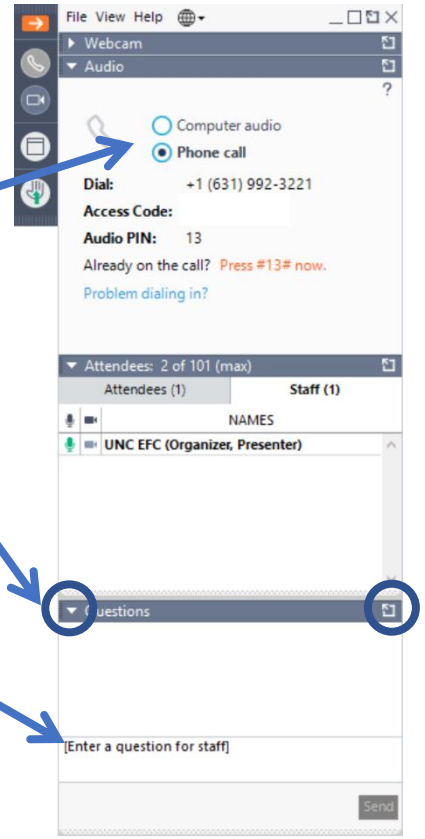
Using the control panel

Audio: please choose between computer audio or phone call

If you do not hear audio right now, please check your speaker volume or enter #[your Audio PIN]# if using phone

Click to open in Control Panel

Submit **questions** in the Questions box at any time, and press [Send]



Click to open in separate box and resize

www.efcnetwork.org

Certificate of Completion

Registered attendees can receive a certificate of attendance for participating in this webinar today. This webinar **has not** been submitted to licensing agencies for preapproval of continuing education credits. We will provide a certificate of attendance as a courtesy for self submittal purposes.

In order to receive an attendance certificate, you must:

- **Attend the entire 1-hour webinar, and**
- **Join this session using the unique join link emailed to you when you registered**

It can take up to 30 days to send out certificates of attendance, and we cannot guarantee that this webinar will meet requirements for specific CEU or license renewal needs.

If you have questions or need assistance, please contact *smallsystems@syr.edu*.

About Us

The Environmental Finance Center Network (EFCN) is a university-based organization promoting innovative and sustainable environmental solutions while bolstering efforts to manage costs.

EFCN
environmental finance center network

Smart Management for Small Water Systems

The Smart Management for Small Water Systems Program works in every state, territory, and the Navajo Nation. All small drinking water systems are eligible to receive free training and technical assistance.

The Small Systems Program Team

- Environmental Finance Center at The University of North Carolina at Chapel Hill
- Environmental Finance Center at Wichita State University
- EFC West
- Government Finance Officers Association (GFOA)
- Great Lakes Environmental Infrastructure Center
- National Association of Development Organizations (NADO)
- New England Environmental Finance Center at the University of Southern Maine
- Southwest Environmental Finance Center at the University of New Mexico
- Syracuse University Environmental Finance Center
- Environmental Finance Center at the University of Maryland
- Rural Community Assistance Corporation
- Environmental Finance Center at California State University, Sacramento

Leveraging Regional Development Organizations to Support Small Water Systems

Brett Schwartz
NADO Research Foundation
January 26, 2021

NADO
NATIONAL ASSOCIATION OF DEVELOPMENT ORGANIZATIONS
RESEARCH FOUNDATION

Regional Development Organizations (RDOs)

The term "regional development organization" or RDO refers to the multi-jurisdictional regional planning and development organizations known as:

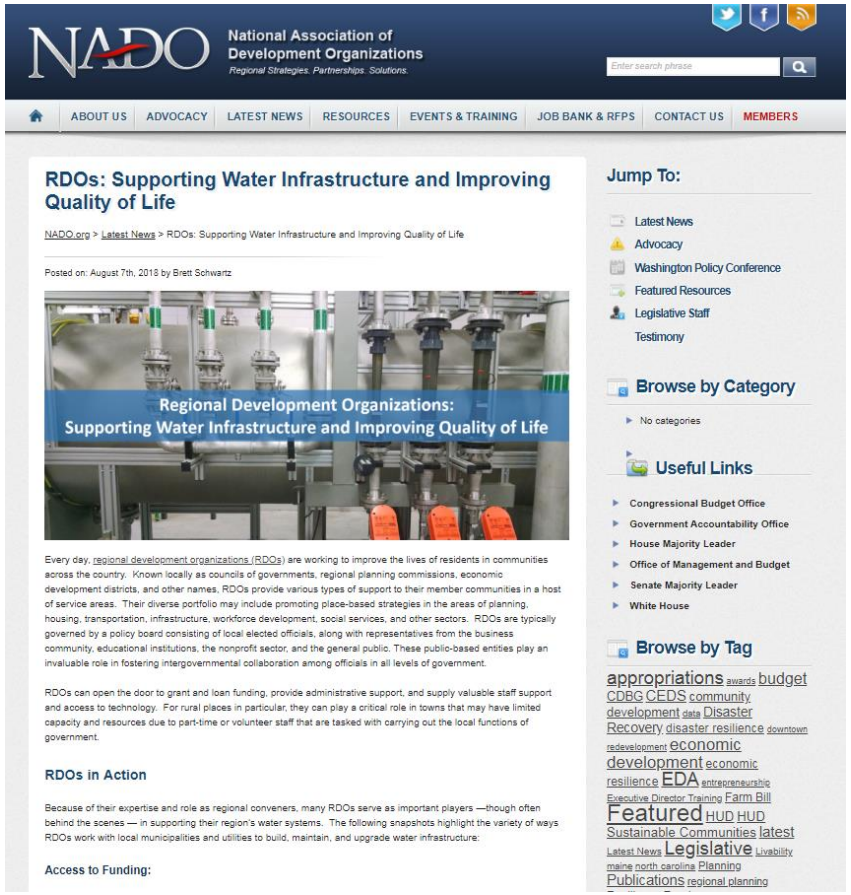
- councils of governments
- regional councils
- economic development districts
- local development districts
- planning and development councils
- other local names

Resilience: The ability of a region or community to anticipate, withstand, and bounce back from shocks, disruptions, and stresses including:

- ❑ Weather-related disasters or hazards / Impacts of climate change
- ❑ The closure of a large employer or military base
- ❑ The decline of an important industry
- ❑ Changes in workforce / effects of automation
- ❑ COVID-19 response & recovery
- ❑ Much more…


Because of their expertise and role as regional conveners, many RDOs serve as important players —though often behind the scenes — in supporting their region's water systems. These include:
Providing Access to Funding through Grant Writing and Fostering Partnerships
Conducting Data Collection and Mapping
Supporting Regionalization
Promoting Broader Economic Development

Looking for more on RDOs and water systems?



Take a Deeper Dive in Our Blog Post @ NADO.org

Two previous webinar recordings available @ efcnetwork.org

Stay in Touch!

Brett Schwartz

Associate Director
NADO Research Foundation
bschwartz@nado.org

NADO
NATIONAL ASSOCIATION OF DEVELOPMENT ORGANIZATIONS
RESEARCH FOUNDATION

Today's Presenters

Liz Cody, Community Development Specialist,
Southeast Nebraska Development District

Jean Crews-Klein, Regional Planning Director,
Lumber River Council of Governments (North Carolina)

Brett Schwartz, Associate Director
NADO Research Foundation (Washington, DC)

NADO/EFC Network Webinar 1/26/2021

Leveraging Development for Small Communities

Water and Wastewater Infrastructure

SENDD

Southeast Nebraska Development District

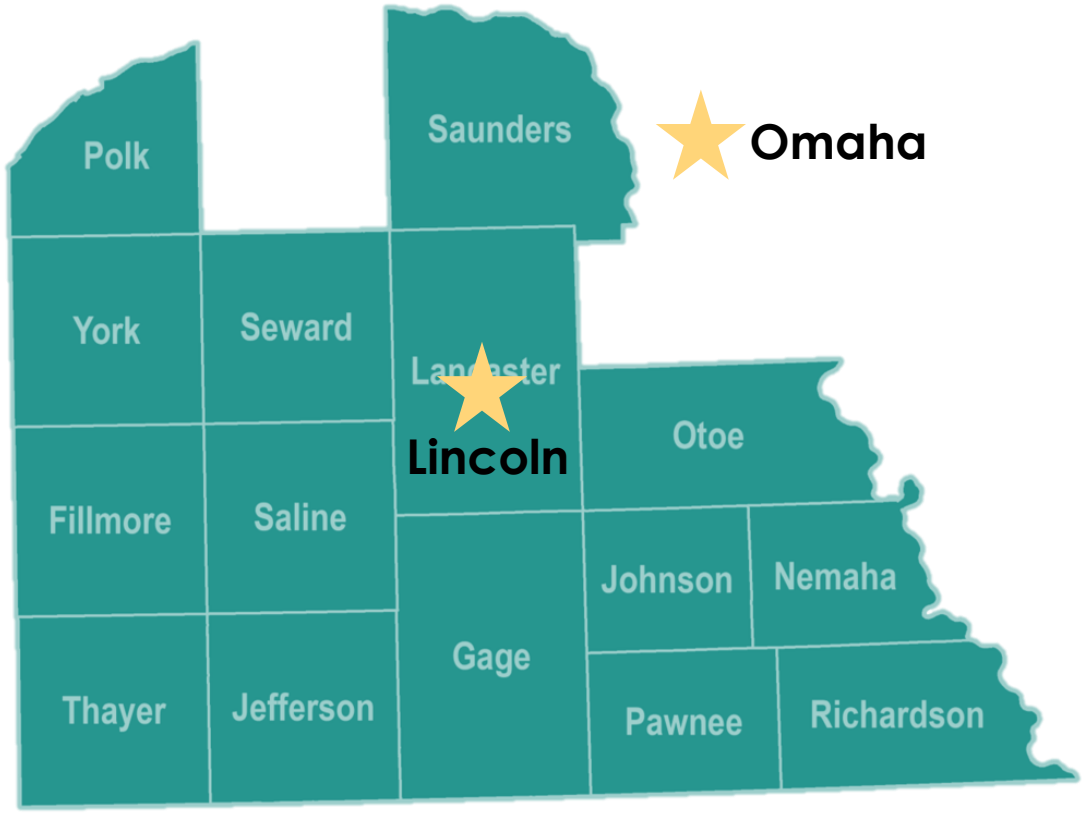
Liz Cody
Community Development Specialist

Honestly, it’s not for everyone.

Hello, from Southeast Nebraska Development District

- Regional planning
- Public Works
- **Water and Wastewater**
- Downtown Revitalization
- Tourism Development and Outdoor Recreation
- Housing rehabilitation
- Workforce housing
- Business loans
- Disaster Recovery

Liz Cody
Community Development Specialist



Southeast Nebraska Development District

8,500 square miles

140 rural jurisdictions

4 metropolitans of 4500+

Our mission is to identify common problems, their solutions, and to provide continuing support for efficient and effective government

Morse Bluff, Nebraska

Population 128

2020 Improvements

- Replace water tank
- New well and pipes
- Pump and pumphouse additions
- Replace 4 water mains
- Radio-read meters

Project Budget over $1M

Morse Bluff, Nebraska

Population 128

Leveraged Funds

- USDA SEARCH Grant
- USDA Rural Development
- CDBG Block Grant
- Local financing

NEBRASKA
Good Life. Great Opportunity.
DEPT. OF ECONOMIC DEVELOPMENT


WELCOME TO
YORK

1. Start Strong On Planning

- Asset Management and GIS
- County-wide Housing Study
- Downtown Revitalization Plan
- Comprehensive Plan
- Community Surveys

NADO ALICEANN WOHLBRUCK IMPACT AWARDS

2. Define Priorities

- 100-year-old water mains
- Housing shortage
- Downtown Disinvestment
- Political and Financial Challenges

NADO ALICEANN WOHLBRUCK IMPACT AWARDS

3. Coordinate Solutions

- Water main replacement
- Purchase-Rehab-Resale

  P/R/R Housing Program
- Downtown Façade

  Improvement &

  Commercial Rehab

NADO ALICEANN WOHLBRUCK IMPACT AWARDS

Who were our key partners?

YORK NEBRASKA

NEBRASKA
Good Life. Great Opportunity.
DEPT. OF ECONOMIC DEVELOPMENT

YORK
Chamber of Commerce

BUSINESS · COMMUNITY · OPPORTUNITY
YCDC
NEBRASKA
York County Development Corporation
COMING TOGETHER TO GROW

4. Measure Outcomes

- **24 blocks** of downtown water main replaced
- **6 Homes** rehabilitated
- **20+ Businesses** assisted
- **2019** NADO Impact Award

NADO ALICEANN WOHLBRUCK IMPACT AWARDS

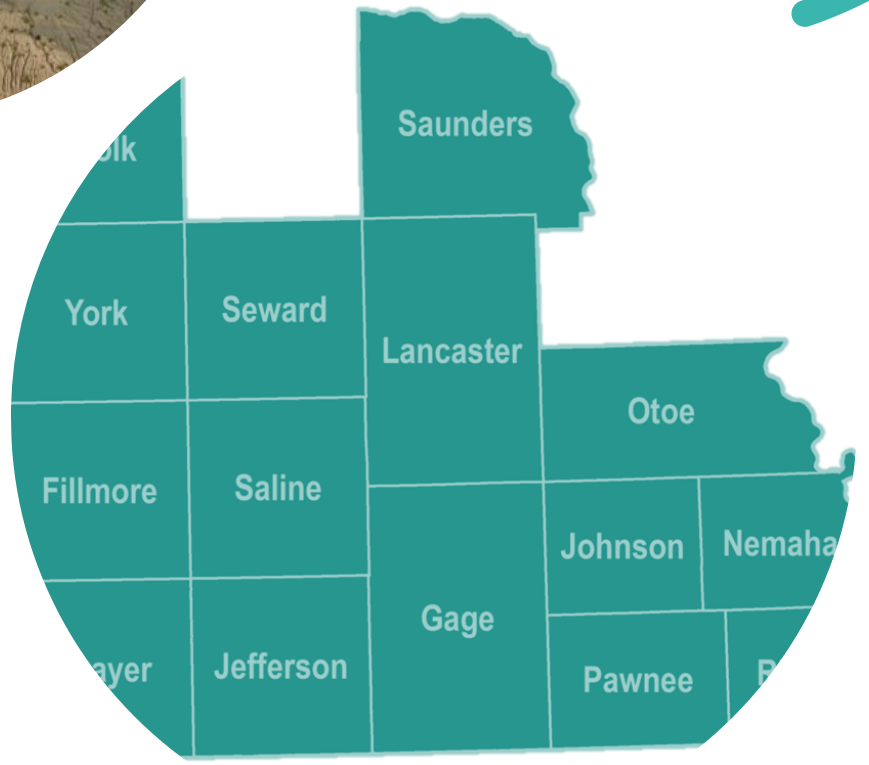
SENDD's Key Roles

- Stimulate regional planning
- Share insight from past projects
- Identify local partners
- Coordinate funding sources
- Write & administer grants
- Assist with procurement and federal compliance (e.g. Davis-Bacon)
- Advocate to funding agencies
- Support local property owners and residents

NADO
ALICEANN WOHLBRUCK
IMPACT AWARDS

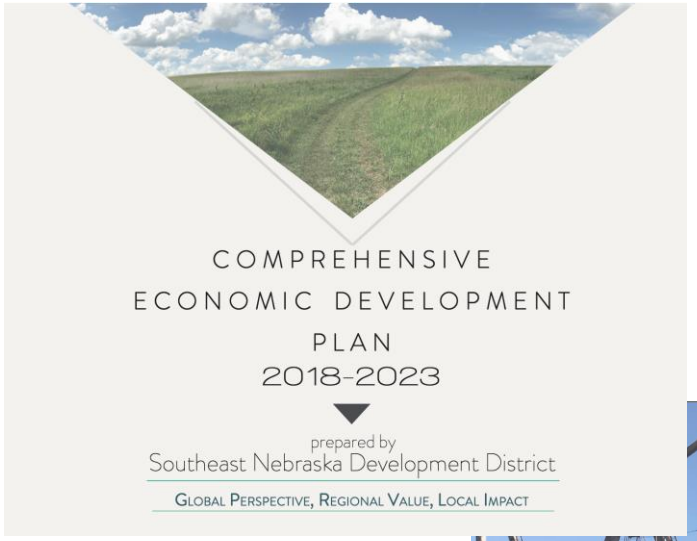
Challenges for Future Projects

- Lack of local planning
- Lining up project timelines and rules
- Staffing and Turnover
- Limited resources for asset management
- Climate Change



Future Directives

- Continue to provide individualized support to communities
- Develop regional asset management strategy and GIS tools for disaster recovery
- Add value to regional collaborations
- Establish collaborative frameworks for projects of different sizes
- Coordinate with our CEDS regional infrastructure goals



Southeast Nebraska Development District

2019 Annual Review

2018-2023 Regional CEDS

all across Nebraska
NROC
Nebraska Regional Officials Council

Thank you!

Liz Cody

Community Development Specialist

lcody@sendd.org

SENDD

Southeast Nebraska Development District

all across Nebraska

NROC

Nebraska Regional Officials Council

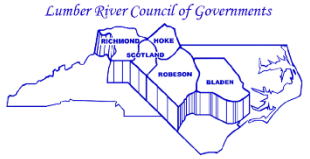
Find us online at

www.sendd.org

Water and Wastewater Asset Management –

Benefits of Working with a Regional Council of Government

January 26, 2021 NADO/EFC Network Webinar

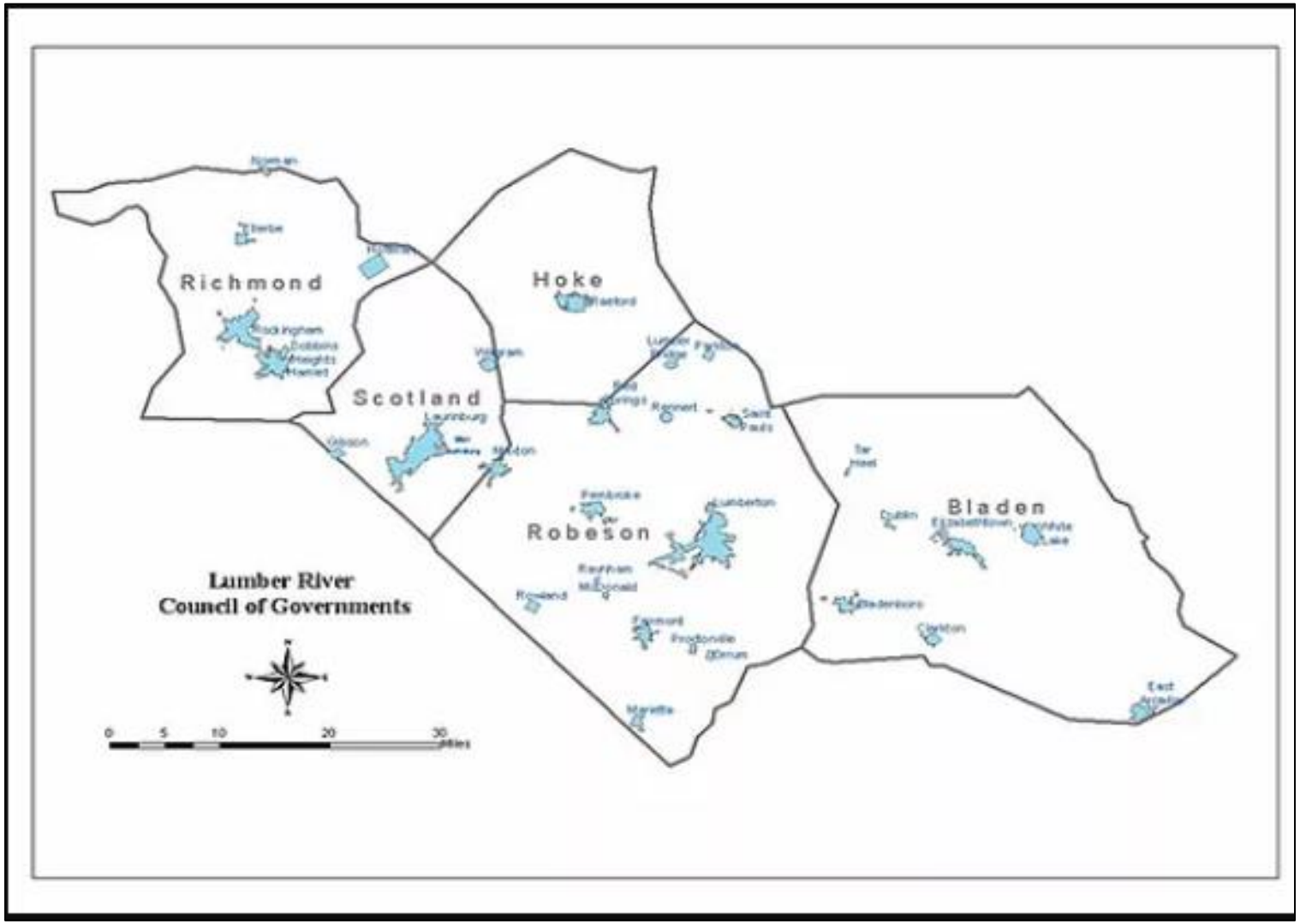


Greetings from North Carolina

Lumber River Council of Governments

- Regional organization covering five counties in southeastern North Carolina: Bladen, Hoke, Richmond, Robeson and Scotland.
- The purpose of the LRCOG is to assist its local government members with issues they deem appropriate.
- The LRCOG serves as a planner/administrator for a number of federal administrative programs dealing with older adults, worker training and transportation planning.
- Our Community and Economic Services staff works directly with local governments on planning and zoning, water and wastewater planning, water resources planning, grant writing and administration, etc.

Map of LRCOG Region



Lumber River Council Region Member Governments

- Regional organization covering five counties in southeastern North Carolina: Bladen, Hoke, Richmond, Robeson and Scotland.
- With a few exceptions, the counties and the towns within them are economically distressed: high poverty, low median household incomes, and experiencing population loss.
- Large number of very small towns which own and operate their own water and wastewater systems.
- Many of these systems are operating in the red- expenses greater than revenue from sales, living on fund balances accumulated before the loss of manufacturing jobs that took place in the 1990s.
- As a result, many of these systems have been poorly maintained and are failing.

Why did we think Asset Management would be useful?

1. Systems would have a complete inventory of physical assets.
2. After each asset is assessed for condition, systems would have much better information on maintenance, repair, and replacement decisions which would need to be made.
3. That information could be used to develop projects and plan for funding to make the needed upgrades and improvements, or develop maintenance plans.

Lumber River Council of Governments

4. Asset Management could help our town better avoid this nightmare.

Emergency Night Repair

5. Asset Management was the cornerstone to build a sustainable economic future for the Towns.

Our Asset Management Program

- Started 11 years ago.
- Not many resources available at that time.
- We were looking for an asset management database program that was affordable or free and would be easy for town staff to use.
- Settled on the EPA CUPSS program and coupled that with GIS mapping of water and sewer assets using as-built documents, old system maps (if any existed),staff knowledge, service call info, etc.

Water: Check Up Program for Small Systems (CUPSS)

Water Home

Drinking Water

Education & Training

Grants & Funding

Laws & Regulations

Our Waters

Pollution Prevention & Control

Resources & Performance

Science & Technology

Water Infrastructure

- Drinking Water
- Green Infrastructure
- Septic Systems
- Sustainable Infrastructure
- Water Security
- Wastewater
- WaterSense

What You Can Do

Check Up Program for Small Systems (CUPSS)

CUPSS Home | Basic Information | Case Studies | CUPSS Software | Resources | Training Events

CUPSS is a free, easy-to-use, asset management tool for small drinking water and wastewater utilities. CUPSS provides a simple, comprehensive approach based on EPA's highly successful Simple Tools for Effective Performance (STEP) Guide series. Use CUPSS to help you develop:

- A record of your assets;
- A schedule of required tasks;
- An understanding of your financial situation;
- A tailored asset management plan.

This website is designed for CUPSS users, trainers and all others involved with small drinking water or wastewater utilities. Information is presented on the following topics:

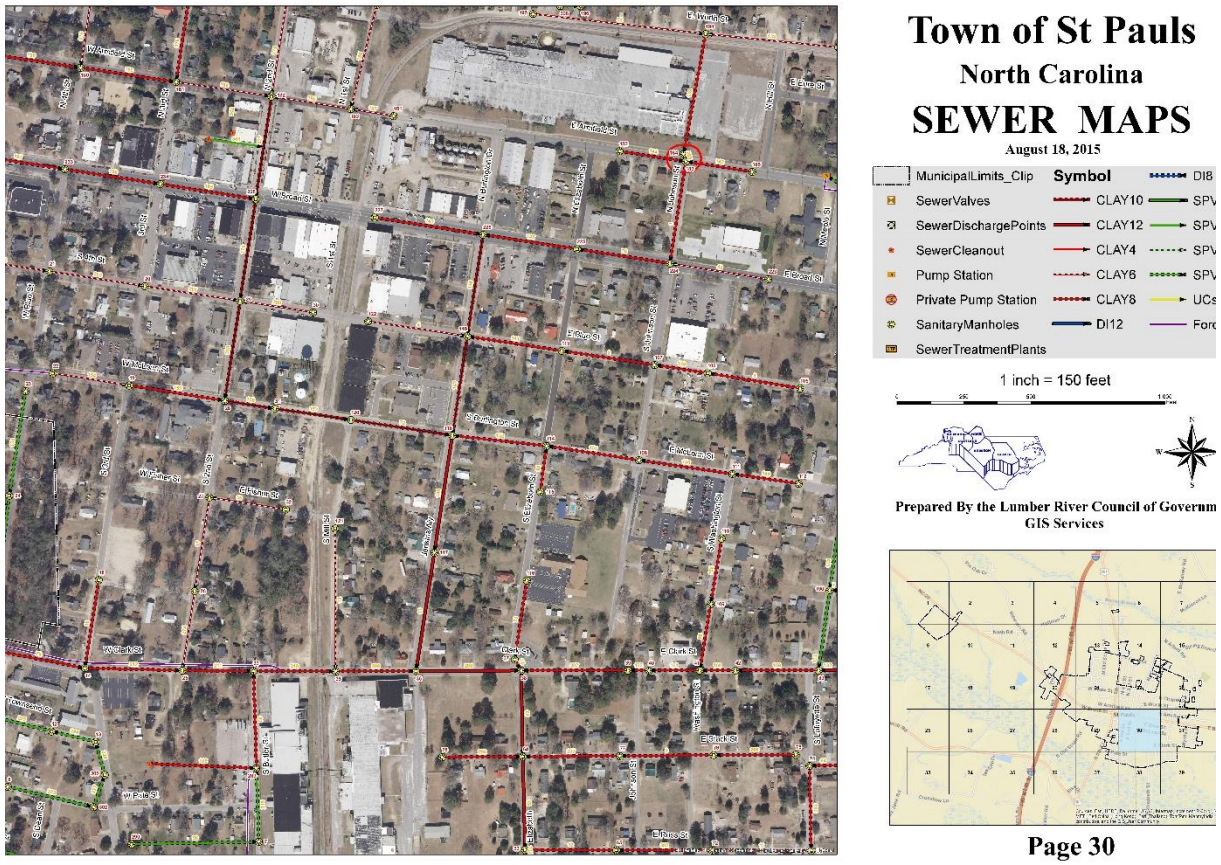
- Basic Information – Get answers to frequent questions about CUPSS and learn how CUPSS is designed, how it works and what it can do for you.
- Case Studies – Read about the experiences of small drinking water and wastewater utilities as they take on the challenge of asset management.
- CUPSS Software – Download a copy of the CUPSS application or request a copy of the installation CD. You can also register as a CUPSS user to receive updates and notification of training opportuni
- Resources – Find help as a CUPSS user or trainer in the form of CUPSS document

Quick Links

- **CUPSS Spring Training Dates**
- **CUPSS v1.3.7 Released**
- **CUPSS Self-Paced Training**
- Get a copy of CUPSS
- Register your CUPSS CD
- Learn about asset management
- Find training near you
- Sign up to be a trainer

Where We Started.

Lumber River Council of Governments



Town of St Pauls
North Carolina
SEWER MAPS
August 18, 2015

	Symbol	
MunicipalLimits_Clip		DI8
SewerValves	CLAY10	SPV
SewerDischargePoints	CLAY12	SPV
SewerCleanout	CLAY4	SPV
Pump Station	CLAY6	SPV
Private Pump Station	CLAY8	UCs
SanitaryManholes	DI12	Ford
SewerTreatmentPlants		

1 inch = 150 feet

Prepared By the Lumber River Council of Governm
GIS Services

Page 30

Where We Are Now

Line location

Line material type

Line diameter

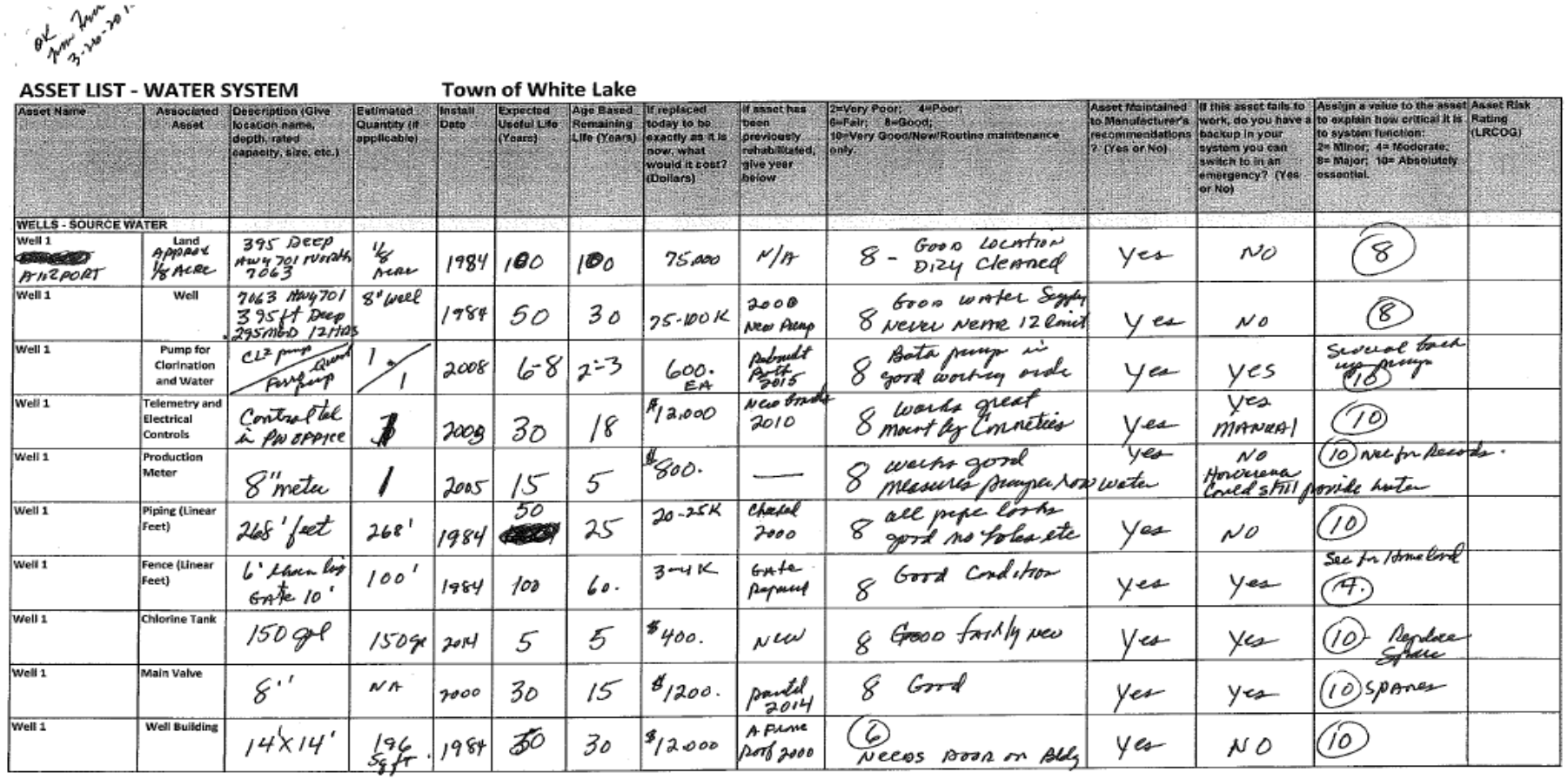
Lift Stations/Booster Pumps

Wells/Water Storage

Treatment

Understanding Asset Management

Sample spreadsheets from a client. Start entering the data and run draft reports.



ASSET LIST - WATER SYSTEM — **Town of White Lake**

Asset Name	Associated Asset	Description (Give location name, depth, rated capacity, size, etc.)	Estimated Quantity (if applicable)	Install Date	Expected Useful Life (Years)	Age Based Remaining Life (Years)	If replaced today to be exactly as it is now, what would it cost? (Dollars)	If asset has been previously rehabilitated, give year below	2=Very Poor; 4=Poor; 6=Fair; 8=Good; 10=Very Good/New/Routine maintenance only.	Asset Maintained to Manufacturer's recommendations ? (Yes or No)	If this asset fails to work, do you have a backup in your system you can switch to in an emergency? (Yes or No)	Assign a value to the asset to explain how critical it is to system function: 2= Minor; 4= Moderate; 8= Major; 10= Absolutely essential.	Asset Risk Rating (LRCOG)
WELLS - SOURCE WATER													
Well 1 [redacted] AIRPORT	Land Approx 1/8 ACRE	395 DEEP Hwy 701 North 7063	1/8 Acre	1984	100	100	75,000	N/A	8 - Good Location Dizy Cleaned	Yes	NO	8	
Well 1	Well	7063 Hwy 701 395 ft Deep 295 MGD 12" CS	8" Well	1984	50	30	75-100K	2008 New Pump	8 Good water Supply Never Nerve 12 Limit	Yes	No	8	
Well 1	Pump for Clorination and Water	Cl2 pump Fan pump	1 / 1	2008	6-8	2-3	600. EA	Rebuilt Both 2015	8 Beta pump in good working order	Yes	yes	Several back up pumps 10	
Well 1	Telemetry and Electrical Controls	Controlled in PW OFFICE	1	2009	30	18	$12,000	New Brain 2010	8 Works great Maint by Cmnetics	Yes	Yes MANUAL	10	
Well 1	Production Meter	8" meter	1	2005	15	5	$800.	—	8 works good Measures pumped Not water	Yes	NO However could still provide water	10 Nice for Records.	
Well 1	Piping (Linear Feet)	268' feet	268'	1984	50 [redacted]	25	20-25K	Chanel 2000	8 all pipe looks good no Leaks etc	Yes	NO	10	
Well 1	Fence (Linear Feet)	6' Chain link Gate 10'	100'	1984	100	60.	3-4K	Gate Repaired	8 Good Condition	Yes	Yes	See for Tower Lock 14.	
Well 1	Chlorine Tank	150 gal	150 gal	2014	5	5	$400.	NEW	8 Good Facility new	Yes	Yes	10 Replace Spare	
Well 1	Main Valve	8"	NA	2000	30	15	$1200.	painted 2014	8 Good	Yes	Yes	10 Spares	
Well 1	Well Building	14'X14'	196 Sq ft.	1984	~~50~~	30	$12,000	A Frame Roof 2000	6 Needs Door on Bldg	Yes	NO	10	

Understanding Asset Management

Share back and forth the information gathered. Each time new information is added the quality of what you have improves.

Assets are ranked based on criticality.

	Asset	Asset Type	Year Installed	Condition	Impact of Failure	Risk	Replacement Date
1	Wastewater Lagoon - Basin	Unlined Earthen Basin - Lagoon	1/1/1964	Good	Catastrophic	High Risk – Immediate Attention	2/1/2024
2	Clay 6" -12"	Sewers	1/1/1950	Fair (Average)	Major	High Risk – Immediate Attention	2/1/2015
3	Pump Station #5 - Submersible Pumps	Pumping Equipment	1/1/2005	Good	Major	High Risk – Immediate Attention	2/1/2015
4	Pump Station #3 - Electrical Controls	Electrical Controls	1/1/2000	Good	Major	High Risk – Immediate Attention	2/1/2015
5	Pump Station #2 - Electrical Controls	Electrical Controls	1/1/1994	Good	Major	High Risk – Immediate Attention	2/1/2015
6	Pump Station #1 - Submersible Pumps	Pumping Equipment	1/1/2006	Good	Major	High Risk – Immediate Attention	2/1/2015

Critical Asset Report Table

We have supplemented our sewer work with flow monitoring and **CCTV when funds were available.**

Photo File	75 - 366_0004.bmp
Code:	RBB
Meter Value:	114.18 ft
Text:	Roots Ball Barrell, from 12 o'clock, to 6 o'clock, 90 % lost, within 8 inch

Photo File	352 - 69 (2)_0000.bmp
Code:	BVV
Meter Value:	17.09 ft
Text:	Broken Void Visible, at 12 o'clock, within 8 inch

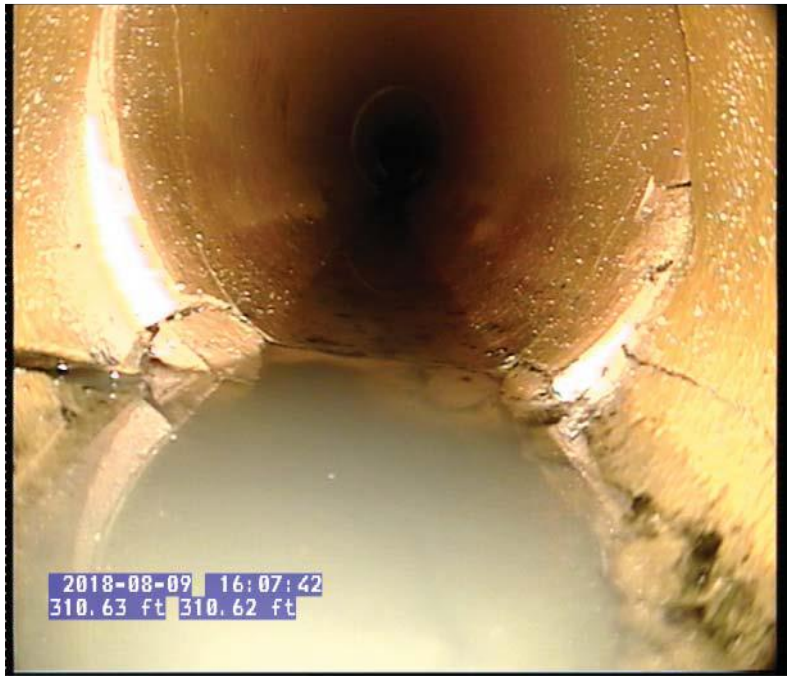
Photo File	397 - 396_0002.bmp
Code:	IR
Meter Value:	32.41 ft
Text:	Infiltration Runner, at 12 o'clock

Photo File	397 - 398_0005.bmp
Code:	HSV
Meter Value:	207.20 ft
Text:	Hole Soil Visible, from 3 o'clock, to 9 o'clock

FINDINGS: Gravity **Sewer Line Condition - CCTV**

Complete Collapse

Joint Offset



Our work over 10 years allows us to make some observations about the systems which we communicate at meetings to funders, local elected officials, regulators and others.

- All systems have some available capacity.
- Majority of systems are groundwater based- very few surface water systems in the LRCOG region.
- Wells are OLD and most are in a state of disrepair- drinking water quality meets the standards but… emergencies are imminent.
- Distribution systems for the central areas also old; very few valves and most are not operational.
- Very few systems have undertaken meter replacement programs.
- Water loss in every system – in some as high as 33% of treated water fed into the distribution system.
- Asbestos Concrete lines and undersized lines used widely in older sections.
- Very few systems have defined upgrade projects.

Drinking Water System Challenges

Old Meters

New Radio Read Meter

Corrosion

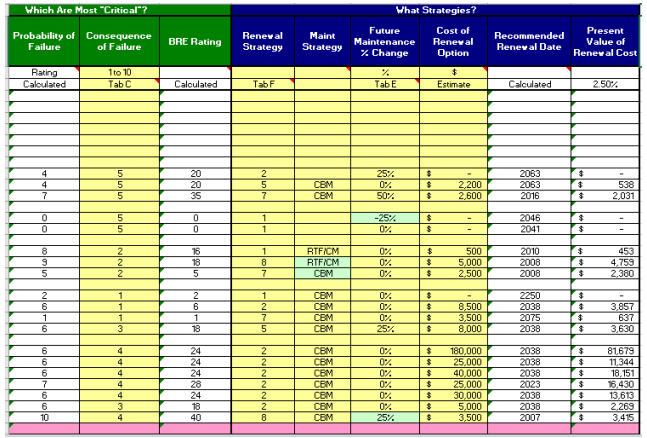
Equipment in place well beyond useful life period.

When you start your journey with Asset Management remember:

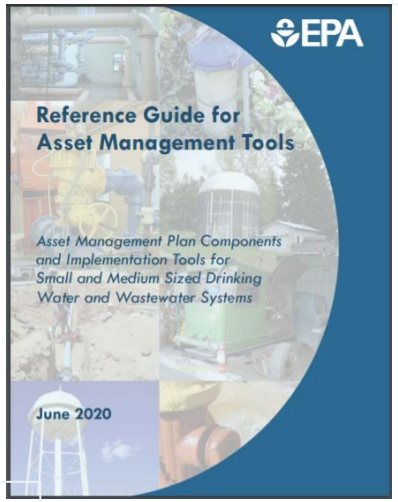
1. Take your time and try to get it right.
2. Don’t be afraid to ask for help.
3. Communicate what you are doing with your users and your leaders (the folks who will be making the decisions about putting into place and funding what you recommend.)
    1. Newsletter
    2. Website
    3. Inserts in your bills

Many Resources Available to Help with Asset Management

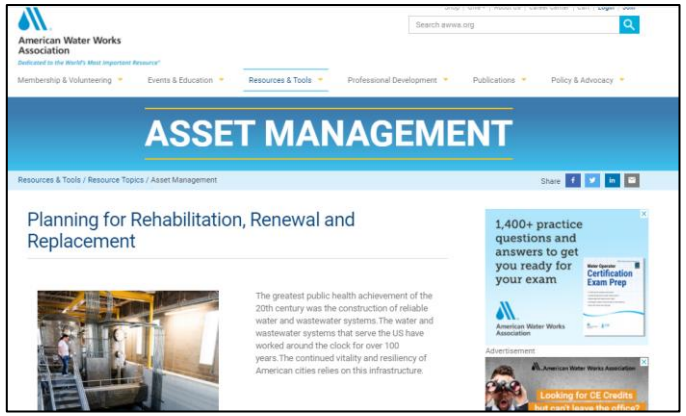
EPA



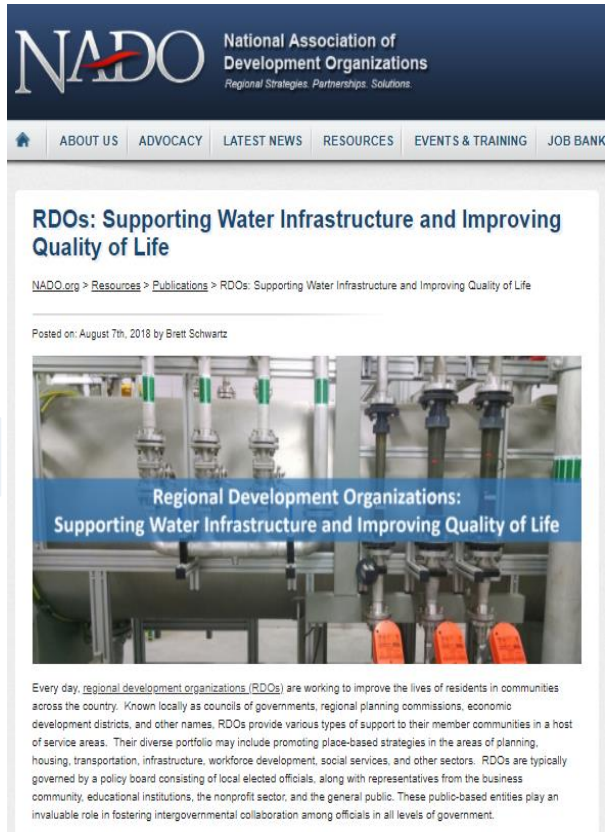
Which Are Most "Critical"?			What Strategies?					
Probability of Failure	Consequence of Failure	BRE Rating	Renewal Strategy	Maint Strategy	Future Maintenance % Change	Cost of Renewal Option	Recommended Renewal Date	Present Value of Renewal Cost
Rating	1 to 10				%	$		
Calculated	Tab C	Calculated	Tab F		Tab E	Estimate	Calculated	2.50%
4	5	20	2		25%	$ -	2063	$ -
4	5	20	5	CBM	0%	$ 2,200	2063	$ 538
7	5	35	7	CBM	50%	$ 2,600	2016	$ 2,031
0	5	0	1		-25%	$ -	2046	$ -
0	5	0	1		0%	$ -	2041	$ -
8	2	16	1	RTF/CM	0%	$ 500	2010	$ 453
9	2	18	8	RTF/CM	0%	$ 5,000	2008	$ 4,753
5	2	5	7	CBM	0%	$ 2,500	2008	$ 2,380
2	1	2	1	CBM	0%	$ -	2250	$ -
6	1	6	2	CBM	0%	$ 8,500	2038	$ 3,857
1	1	1	7	CBM	0%	$ 3,500	2075	$ 637
6	3	18	5	CBM	25%	$ 8,000	2038	$ 3,630
6	4	24	2	CBM	0%	$ 180,000	2038	$ 81,679
6	4	24	2	CBM	0%	$ 25,000	2038	$ 11,344
6	4	24	2	CBM	0%	$ 40,000	2038	$ 18,151
7	4	28	2	CBM	0%	$ 25,000	2023	$ 16,430
6	4	24	2	CBM	0%	$ 30,000	2038	$ 13,613
6	3	18	2	CBM	0%	$ 5,000	2038	$ 2,269
10	4	40	8	CBM	25%	$ 3,500	2007	$ 3,415



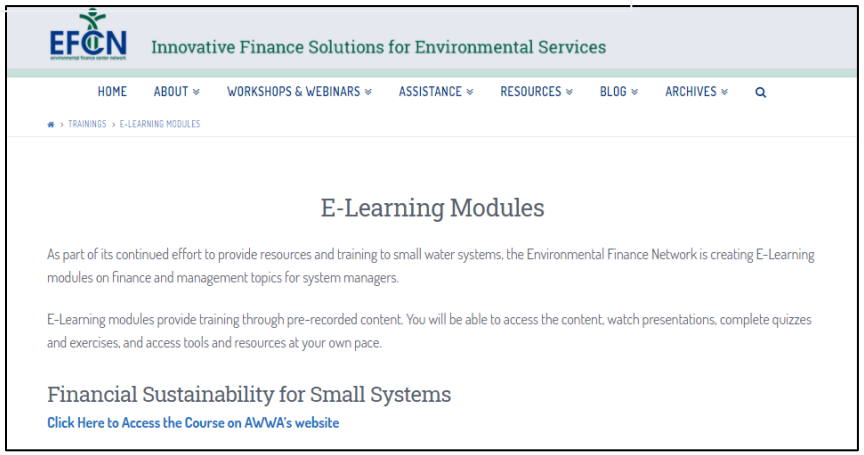
AWWA



NADO



Environmental Finance Centers

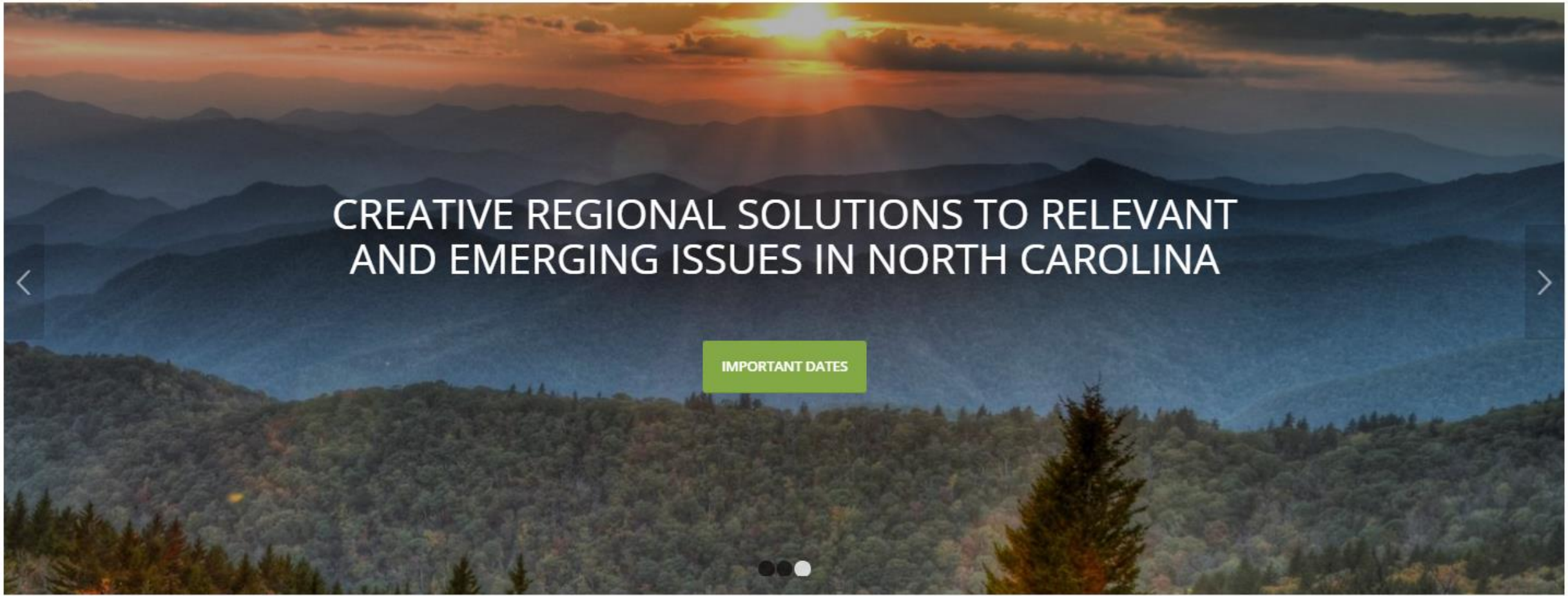


State-Level Rural Water Associations

Don’t Forget Your Regional Development Organization!

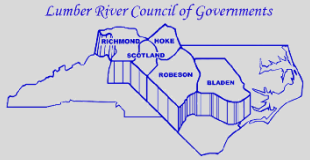
Your Regional Organization may be able to help you with:

- Assistance with understanding the challenges you face.
- Help with mapping and GIS data collection.
- Help with identifying funders for your projects.
- Help with applications and with project administration.
- Help with educating Boards on Asset Management and why it’s worth the investment.
- Help with seeing how water and sewer asset management connects to becoming a sustainable community.


HOME
ABOUT
NC TOMORROW
THE FORUM
SERVICES
REGIONAL COUNCILS
IMPORTANT DATES
RESOURCES
CONTACT
CREATIVE REGIONAL SOLUTIONS TO RELEVANT AND EMERGING ISSUES IN NORTH CAROLINA
IMPORTANT DATES

Lumber River Council of Governments

30 C J Walker Road
Pembroke, NC 28358
Phone: (910) 272-5052
Fax: (910) 521-7556



Questions and Comments?