

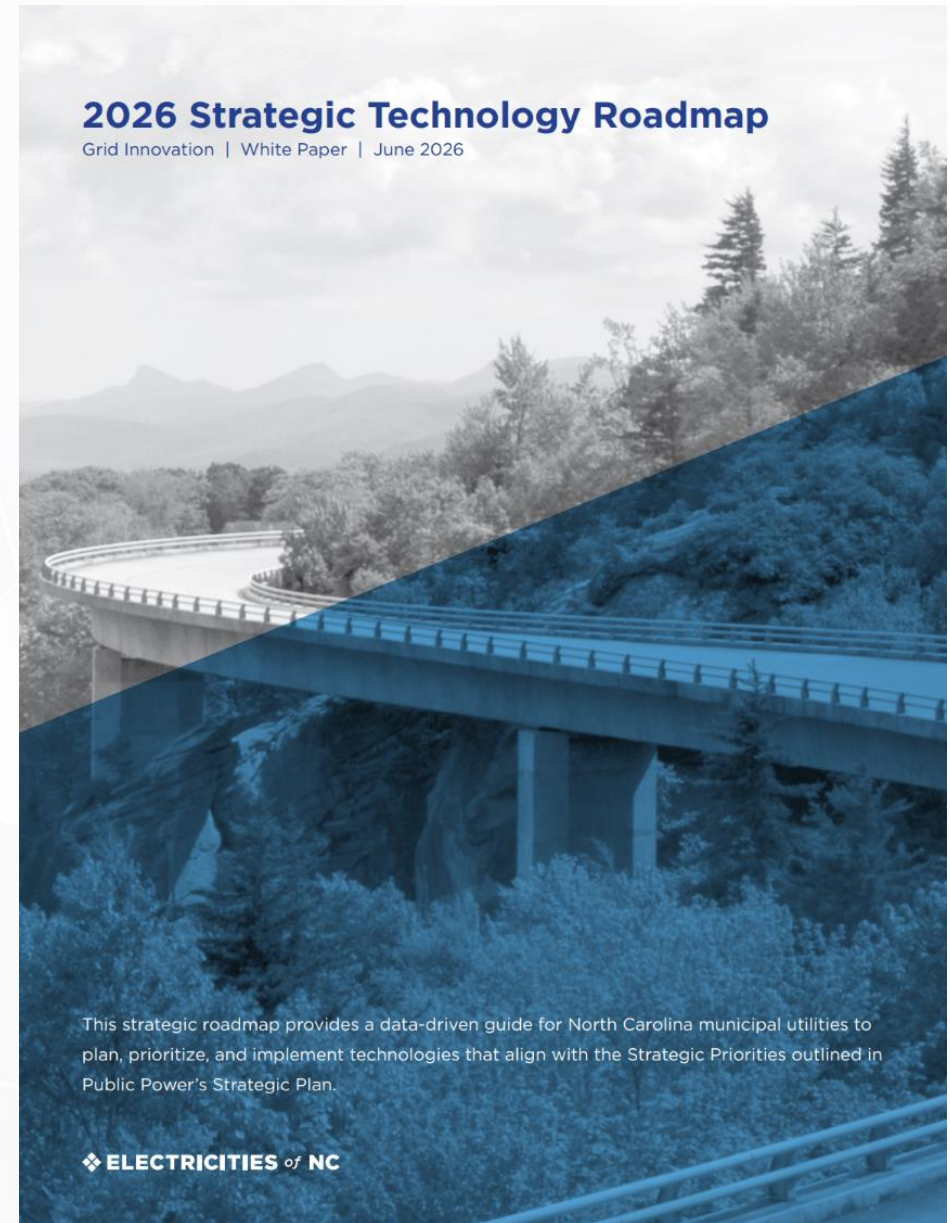
# ***Powering Utilities for the Future: Building the Right Technology Stack***

**Annual Conference Breakout #5 | Strategic Technology Roadmap  
Wednesday, August 19, 2026 | 9:00-10:00 AM**

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# Session Objectives

1. Explain the strategic technology roadmap in plain language.
2. Apply sequencing logic.
  - Foundational → Enabling → Innovative
  - Prerequisites
3. Build a phased technology stack to solve a common problem under budget.
4. Defend the sequence.
  - What comes first, what breaks if skipped, and why it matters.
5. Remember three takeaways.



# Agenda

Minimal lecture; maximum application

| Time  | Segment        | Purpose                                                                     |
|-------|----------------|-----------------------------------------------------------------------------|
| 05-15 | Framing        | Three anchors: not one-size-fits-all, foundations first, team sport         |
| 15-22 | Activity setup | Groups, materials, scenarios, budget tokens, rules, example                 |
| 22-45 | Build-A-Stack  | Teams build a Now / Next / Later roadmap                                    |
| 45-55 | Report-outs    | What tech did you want? What surprised you?<br>What tradeoffs did you make? |
| 55-60 | Close          | Sticky takeaways and next steps                                             |

# What is the Strategic Technology Roadmap?

A data-driven framework for the right technological investment, in the right order, at the right time



## What it is

- Data-driven planning framework
- Prioritizes and sequences investments
- Connects technology to outcomes
- Tailored to utility size, readiness, needs, and constraints

## What it is not

- Not a mandate
- Not a one-size-fits-all checklist
- Not a vendor shopping list
- Not a replacement for local judgment

# Sequencing Model

*Each layer builds on the one below. Skipping layers creates integration problems and stranded investments.*

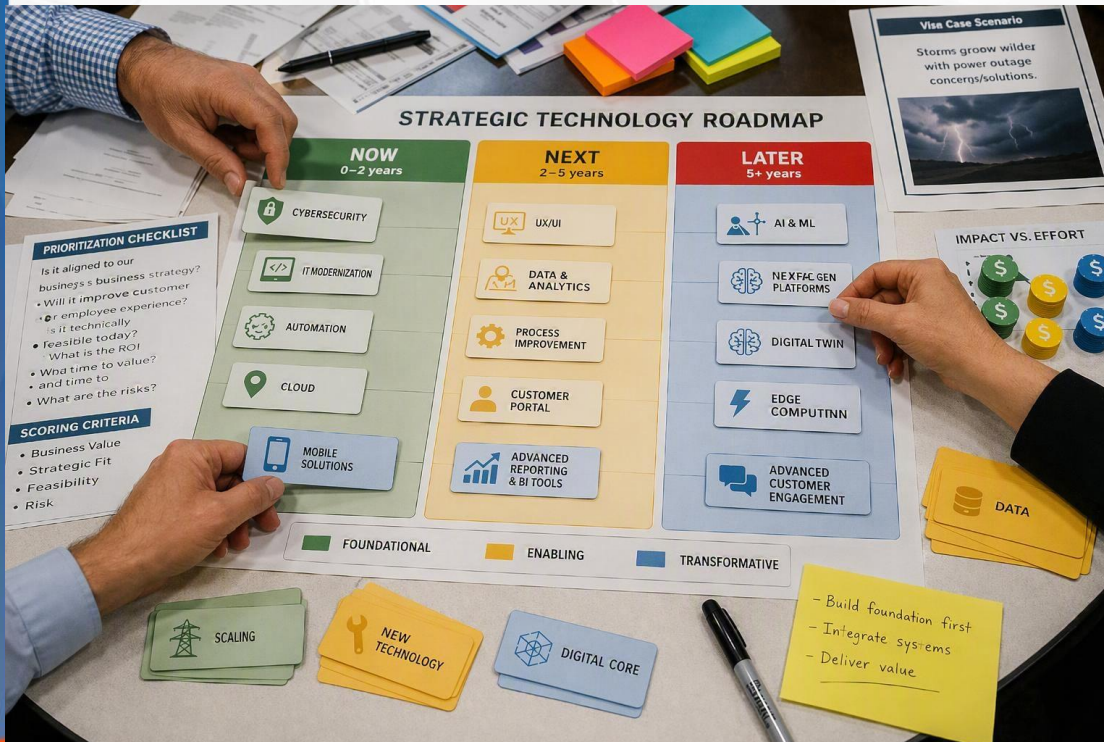
**INNOVATIVE: DERMS, Digital Twins,  
Advanced Analytics, AI**

**ENABLING: OMS, Asset Management, Customer Portals,  
MDMS, Field Mobility, Vegetation Management**

**FOUNDATIONAL: Financial Accounting, CIS/ERP, AMI, Radios,  
SCADA, GIS, Human Resource Information System, Cybersecurity**

# Hands-on Activity: Build-A-Stack

Use the Strategic Technology Roadmap to solve a problem.



If you don't want to build a stack, observe or serve as your table's budget analyst or scribe.

## Your table will receive:

1. Scenario card
2. Budget limit card
3. Cost tokens
4. Technology cards
5. Prerequisites reference guide
6. Now / Next / Later roadmap stack mat

## Your job:

1. Solve the problem.
2. Stay within budget.
3. Follow prerequisites.
4. Explain the sequence.

# Scenarios and Constraints

Each table gets one scenario to address and one budget.

## Outage Response and Reliability

**Objective:** Improve outage detection, restoration visibility, and customer communications to strengthen reliability and customer confidence.

**Large or Medium Sized Utility**

**Budget = 24 (Large), 18 (Medium) Tokens**

## Customer Service Expectations

**Objective:** Improve the customer experience while reducing call volume and manual customer-service workload.

**Medium or Small Utility**

**Budget = 18 (Medium), 12 (Small) Tokens**

## Aging Workforce / Staff Capacity Constraints

**Objective:** Reduce manual workload, preserve institutional knowledge, and support small teams as workforce capacity becomes constrained.

**Small Utility**

**Budget = 12 Tokens**

## Asset Visibility & Infrastructure Management

**Objective:** Improve asset records, condition visibility, maintenance planning, and capital investment prioritization.

**Large or Medium Sized Utility**

**Budget = 24 (Large), 16 (Medium) Tokens**

# Activity: Assign Roles

## Utility Director / City Manager

Define the objective and risk tolerance.

## Finance

Protect the budget and timing.

## Operations / Engineering

Prioritize reliability, safety, and grid needs.

## Customer Service

Advocate for customer experience and lead effective communications.

## IT / Cybersecurity

Validate integrations, data, access, & security.

## Human Resources

Assess workforce impact and training needs.  
Lead change management.

**If a role is missing at the table, assign someone to speak for that perspective.**

# Technology Cards

Cards are color coded so you can focus on sequence.

## FOUNDATIONAL

1. Financial Information Network (FIN) / Enterprise Resource Planning (ERP)
2. Customer Information System (CIS) / Billing
3. Advanced Metering Infrastructure (AMI)
4. Field Communications
5. Supervisory Control & Data Acquisition (SCADA)
6. Geographical Information System (GIS)
7. Human Resource Information System (HRIS)
8. Cybersecurity Suite

## ENABLING

1. Outage Management System (OMS)
2. Interactive Voice Response (IVR)
3. Outage Map
4. Asset Management System (AMS)
5. Meter Data Management System (MDMS)
6. Customer Portal
7. Customer Notification System
8. Work Order Management System
9. Mobile Field Solutions

## INNOVATION

1. Distributed Energy Resource Management System (DERMS)
2. Digital Twin
3. Load Management
4. Advanced Analytics / AI
5. Customer Engagement Platform
6. Virtual Energy Audits
7. Microgrids/Distributed Energy Resources

### INNOVATION

\$\$\$\$

### Distributed Energy Resource Management System

#### USE CASE

Distributed energy resource visibility, orchestration, interconnection support, and grid-edge control.

#### SEQUENCING NOTE

Prereq: customer information system / enterprise resource planning, advanced metering infrastructure, geographic information system, and supervisory control and data acquisition.

# Build Rules

Constraints make this a planning exercise, not a wish list.

1. Create a three-phase roadmap: Now (0-2 years), Next (2-5 years), Later (5+ years).
2. Stay within your budget limit using cost tokens.
3. Do not place a technology until any required prerequisites have been placed.
4. Don't try to build out every technology system your utility requires. For this exercise, just focus on the stack that addresses the problem you are trying to solve.
5. Be ready to explain the sequence and what breaks if you skip steps.



# Exercise Example

## *Scenario: Small Utility Modernization*

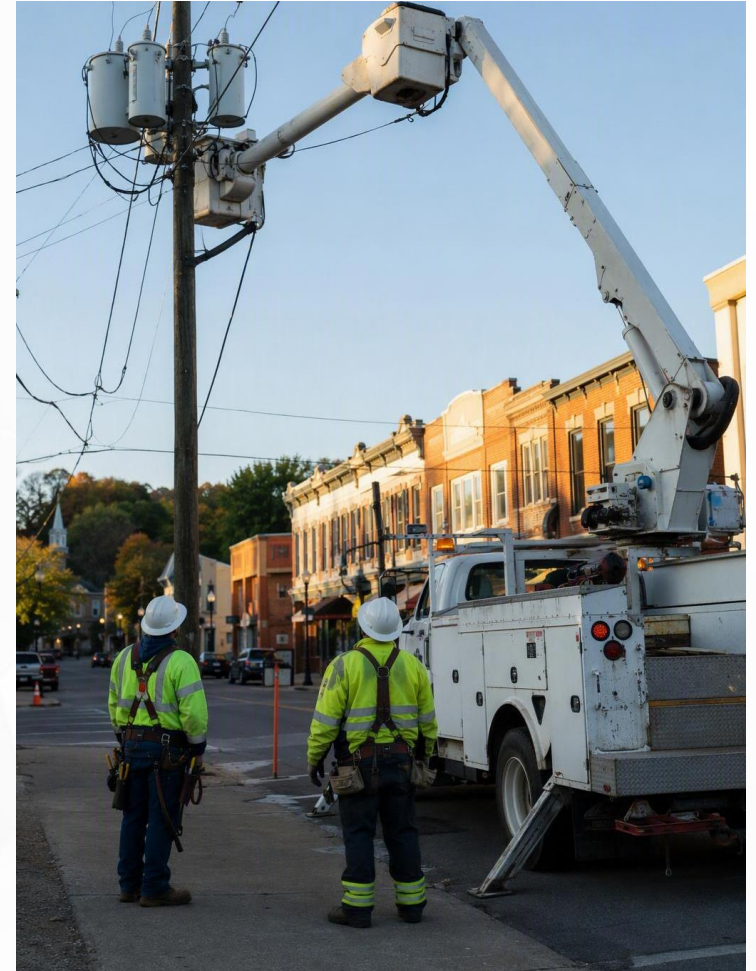
**Objective:** Modernize outdated systems to protect long term viability and meet customer expectations.

### **Challenges:**

- Outdated systems
- Small staff
- Increasing customer expectations

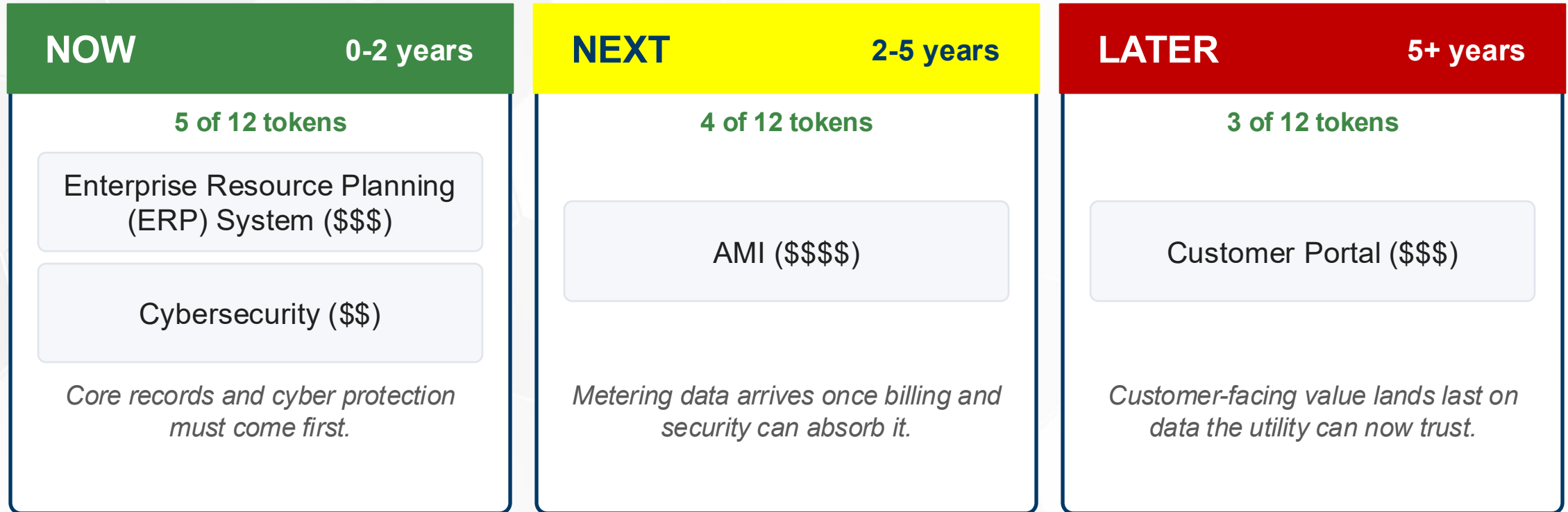
### **Constraints:**

- Budget = 12 tokens
- Limited implementation capacity (no more than two projects per phase)



# A Completed Technology Stack

Small Utility Modernization, sequenced and fully funded: All **12 tokens** allocated with prerequisites in place before the systems that need them.

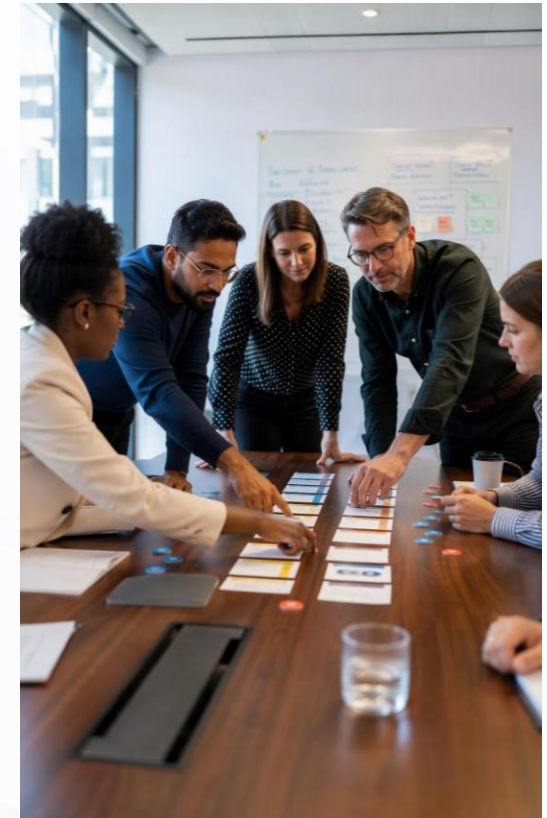


**What breaks if you skip a step?** Skip the core customer and financial systems, and every AMI-enabled billing and customer-facing capability above them becomes harder, slower, and more expensive to integrate later.

# Activity: Build a Tech Stack

Constraints make this a planning exercise, not a wish list.

1. Create a three-phase roadmap: Now (0-2 years), Next (2-5 years), Later (5+ years).
2. Stay within your budget limit using cost tokens.
3. Do not place a technology until any required prerequisites have been placed.
4. Don't try to build out every technology system your utility requires. For this exercise, just focus on the stack that addresses the problem you are trying to solve.
5. Be ready to explain the sequence and what breaks if you skip steps.



**There are no right or wrong technology stacks.  
The process is the focus of this exercise.**

# Reality Checks



- 1. Outage Response & Reliability:**  
✓ You just received a grant worth \$\$\$.
- 2. Staff Capacity Constraints:**  
✓ Another senior employee resigned. The implementation team can now only support only one major platform each phase.
- 3. Customer Service Expectations:**  
✓ Emergency budget cuts were just implemented. Reduce your budget by \$\$.
- 4. Asset Visibility:**  
✓ A cybersecurity review requires stronger identity, access, and data governance before go-live.

- Can your roadmap support this reality check?
- What foundation is missing?
- What must move earlier?

# Report-out Prompts

**1 Describe your scenario and budget limit.**

**2 Name one technology you wanted early but could not justify.**

**3 Name one dependency that surprised you.**

**4 What tradeoff(s) did you make?**

**5 Defend your tech sequence.**

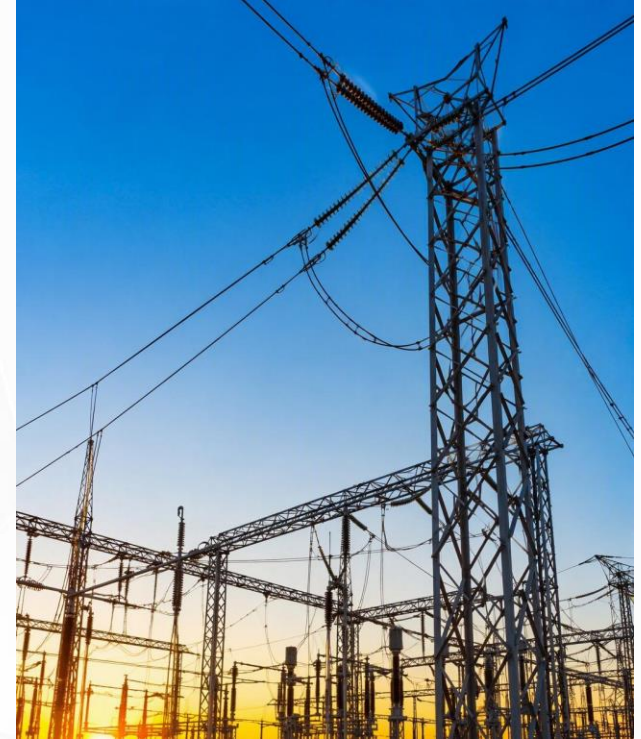


# Three Takeaways

Modernization fails when we skip foundations.

Different goals require different roadmaps, but they have similar prerequisites.

Technology strategy is a team sport.



***The right technology, in the right order, at the right time***

# Next Steps for Attendees

## After the Session

- Download or revisit the STR white paper (reference QR code).
- Identify one near-term problem worth solving with sequencing logic.
- Bring operations, finance, IT, customer service, and leadership into the same conversation.
- Attend our GIS, RP<sub>3</sub>, and SEP working group meetings.
- Free Training: [NCPC Cybersecurity in a Resource Constrained Environment for Public and Rural Utilities](#), Sept 1-3, ElectriCities Raleigh Office

## How ElectriCities Can Help

- Technology readiness conversations
- Resource referrals and vendor connections
- Working groups and peer learning
- Roadmap planning support
- Implementation guidance and best practices
- Vendor liaison
- Collaboration events

STR White Paper



Cybersecurity



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