

# **EXHIBIT 5**




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### Our Role When Disaster Strikes

- Kentucky Rural Water Association is a key member of Kentucky's Management network.
- As the administrator of the Kentucky Water / Wastewater Agency Network (KYWARN) we provide communication, damage assessments and resource allocation to support water / wastewater utilities during disasters.
- KRWA provides liaison support to the Energy and Environment Cabinet and Kentucky Emergency Management as a representative of Kentucky drinking water and wastewater utilities.

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**Recent Weather-Related Events**

- **2021**
  - February Ice Storm
    - Over 70,000 without power
    - Over 5,300 without water & 38,500 under BWA
    - Mobilized generators and personnel
    - KYEM coordinated bottled water
  - March Flooding
    - Over 3,000 without power
    - Over 1,700 without water & 16,000 under BWA
    - 12 STPs bypassing & 19 overflows
    - Mobilized pumps, material and personnel
    - KYEM coordinated bottled water
  - July Flash Flooding Central KY
    - Loss of life
    - Significant property damage
    - Significant damage to wastewater treatment plant
  - December Tornado
    - 24 water & wastewater facilities impacted
    - Over 55,000 without power
    - Over 10,000 without water or under BWA
    - Mobilized generators and personnel
    - KYEM coordinated bottled water
- **2022**
  - January Severe Storms Straight Line Winds / Tornado
    - Power outage
    - Flash flooding
    - Property damage
    - Minimal water utility damage
  - February Ice Storm / Flooding
    - Under 10,000 without power
    - No water outages
    - Generators procured at two water utilities
    - 3 STPs bypassing & 2 overflows
    - Overflows at three wastewater plants
  - Ongoing Stresses to Utility Resilience
    - COVID-19
    - Operator Staffing
    - Aging Infrastructure

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## Western Kentucky Tornado

- On December 10, 2021, beginning at 8:49 pm (CST) Kentucky was impacted by a swarm of tornadoes finally dissipating on December 11, 2021, at 11:47 pm (CST).
- At least 2 tornadoes were long track and on the ground for nearly three hours and traversing 165 miles. Max wind speed 190 mph.
- Many communities affected, Mayfield, Benton, Princeton, Dawson Springs, Bremen, Bowling Green.
- Catastrophic damage to property and infrastructure
- 78 fatalities and over 300 injured

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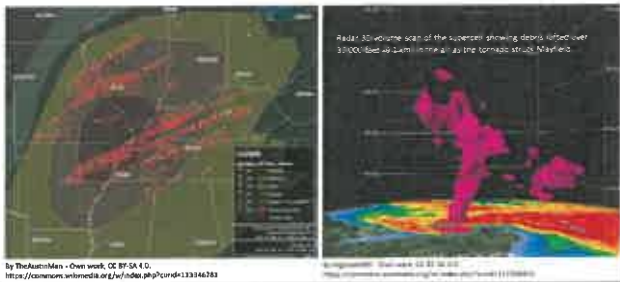
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## The Scale of the Storm Event



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## The Power of the Storm



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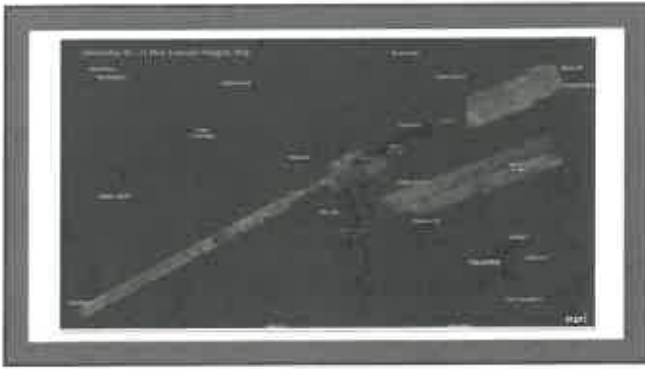
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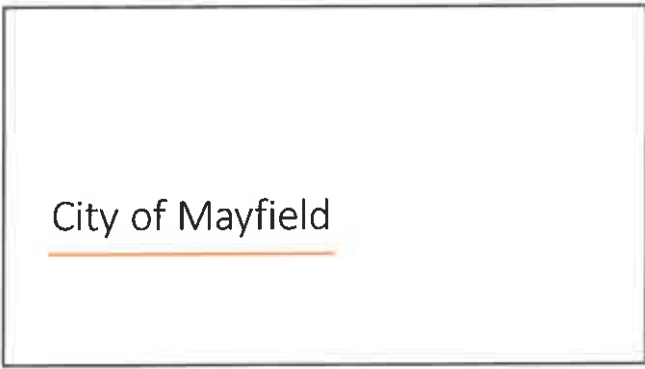
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What Does The Future Hold For These Communities?

- Short term challenges
  - Immediate response, clearing road for ambulances.
  - Shutting off water service to destroyed and damaged homes.
  - Power restoration.
  - Repair leaks; water and sewer.
  - Re-establish customer billing.
  - Evaluate the "new normal" on operations and finances.
- Longer term challenges
  - Revenue?
  - Will the residents return?
  - Will businesses return?
  - What if only a few return?
  - Partial rebuilding in neighborhoods?
  - Can debts be serviced?
  - Refunding debt?
  - Raise rates?

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What Does The Future Hold For Your Utility?

- Natural Disaster
  - Tornadoes
  - Ice Storm / Extreme Winter Weather
  - Flooding
  - Drought
  - Severe Storm / Lightning
  - Forest Fire
- Manmade Disaster
  - Cyber Threat / Ransomware Attack
  - Accidental Contamination
  - Vandalism
  - Terrorism
- Operational Disaster
  - Catastrophic Equipment Failure
  - Staffing
  - Pandemic

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"Plans are nothing; planning is everything." ~ Dwight D. Eisenhower

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### Lessons Learned

- Develop and update an Emergency Response Plan
- Join KYWARN ([www.kywarn.org](http://www.kywarn.org))
- Implement a GIS based asset inventory from source to customer
- Know the exact power requirements for your facilities
- Install permanent generators at treatment facilities
- Locate rental companies that can source your mobile generator needs
- Install a safety transfer switch at facilities without a permanent generator
- Set adequate rates, fund depreciation because nothing drains your accounts faster than a disaster

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"Volunteers don't get paid, not because they're worthless, but because they're priceless." — Sherry Anderson

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## Volunteer Utilities to Recognize

- Adairville Water Works
- Cabert City Municipal Water & Sewer
- Cleveland Environmental Authority
- Christian Co. Water District
- City of Madisonville
- Greenville Utilities
- Hardin Co. Water District #1
- Hardin Co. Water District #2
- Hopkinsville Water Environment Authority
- Illinois American Water
- Louisville Metropolitan Sewer District
- Louisville Water Company
- McCreary Co. Water District
- Nebo Water District
- North Hopkins Water District
- Oldham Co. Water District
- Paducah Water Works
- Paducah Joint Sewer Agency
- Sturgis Water System
- West McCracken Water District
- Illinois American Water

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While natural disasters capture headlines and national attention short-term, the work of recovery and rebuilding is long-term. ~ Sylvia Mathews Burwell



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# CYBER SECURITY IS A TEAM SPORT

JACOB PUCKETT - BUSINESS DEVELOPMENT MANAGER  
UNITED SYSTEMS & SOFTWARE - TECHNOLOGY PROCESS MANAGEMENT  
JACOB@UNITEDSYSTEMS.COM 270-282-7060

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## WHAT 80% OF UTILITIES THINK ABOUT CYBER SECURITY



**"It Won't Happen To Me!"**

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## OBLIGATORY SLIDE OF FACTS

- 1. CYBER ATTACKS ARE MORE LIKELY TO BRING DOWN F. OR OTHER SERVICE (DEFENSESPO UNCLASSIFIED, 2011)
- 2. OVER 75% OF TRACKED CYBERATTACKS START WITH AN EMAIL (BOJING BORK 2009)
- 3. IN 2008 THE FBI RECEIVED 18,411 INTERNET CRIME COMPLAINTS RELATED TO TECH SUPPORT TRICKS AND TRAPS VICTIMS IN 26 COUNTRIES (FBI, 2008)
- 4. GLOBAL CYBERCRIME COSTS ARE EXPECTED TO GROW BY 15% FOR 2008 OVER THE NEXT FIVE YEARS REACHING \$14.3 TRILLION ANNUALLY BY 2012 (CYBERSECURITY VENTURES, 2008)
- 5. MORE THAN HALF OF ALL CONSUMERS HAVE EXPERIENCED A CYBERCRIME, WITH AROUND ONE IN THREE FALLING VICTIM IN THE PAST YEAR ALONE (SECURON, 2011)
- 6. IN 2008 THE FBI RECEIVED 18,411 INTERNET CRIME COMPLAINTS PER DAY (FBI, 2008)

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WHO DOES YOUR  
TEAM CONSIST OF

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BOARD OF DIRECTORS  
SUPERINTENDENT  
OFFICE MANAGER  
OPERATORS



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**PROBLEM!**

THERE'S NO IT PERSON LISTED!



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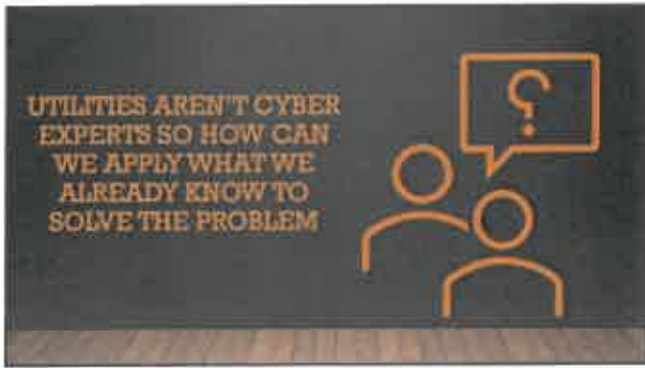
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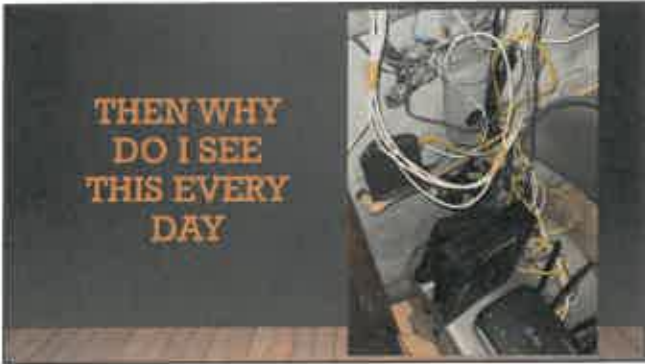
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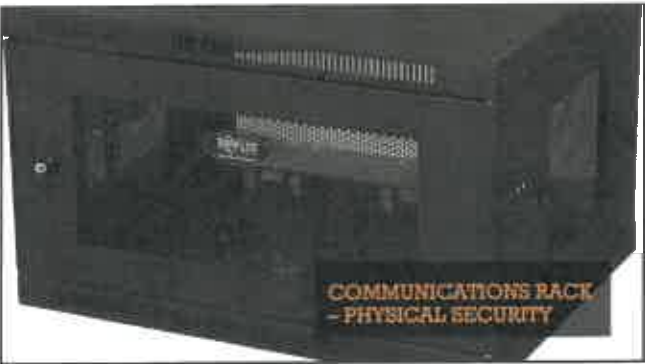
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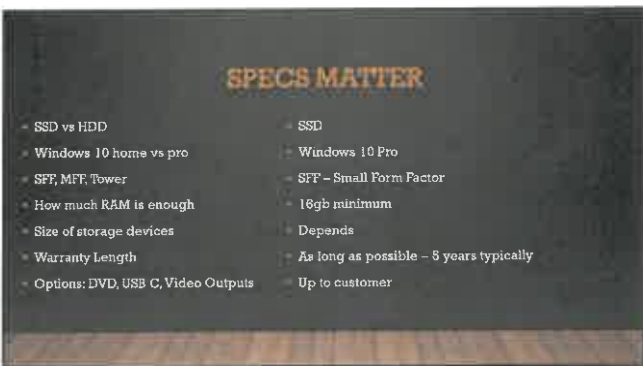
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**CYBER SECURITY**

- Educate yourself (or hire someone who is educated)
- Understand it's everyone's responsibility
- Starts at the top with leadership

"If you think education is expensive, try estimating the cost of ignorance."  
- Howard Gardner

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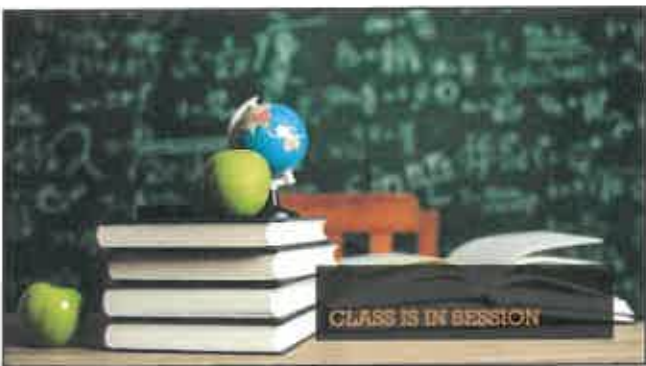
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### TYPES OF EMAIL ATTACKS

- Social Engineering
- Mal-spam
- Phishing
- Bot Attacks
- Spoofing
- Malware
- Impersonate your boss or vendor
- Spam with malicious code
- Used to gather names and PWs
- Malicious use of computers
- Google.com VS Gooogle.com
- Software created to steal data

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### EMAIL IS THE #1 ATTACK VECTOR

- Which email host should I use?
- How long should my PW be?
- Should I turn on 2 factor?
- "I get tons of junk mail"
- Should I click the link?
- Did I inherit \$4trillion Dollars???
- Microsoft Office 365
- (1" off, not "utility") LONG Phrase
- ABSOLUTELY
- Unsubscribe from EVERYTHING
- Not unless you verify the sender
- Also NO! Don't give out banking info via email ever! Call the bank.

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### TYPES OF BACKUP SOLUTIONS

- Local backup
- Cloud Backup
- Hybrid
- Automatic – tool based
- Business Continuity & disaster recovery
- External Hard drive
- Sharepoint, Google drive
- Local and Cloud
- Takes a backup every so often
- Mirror Image of data available 24/7 as often as every 15 minutes

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**CLEAN AND UPDATED**

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### COMPUTER HEALTH

- Keep Machines Clean
- Latest Security Software
- Updated operating system
- Anti-Virus & Anti Malware
- Patch Key Software
- Disk defrag/cleanup
- Cost \$\$, depends on your needs
- Windows 10/11 ONLY - Patched
- Windows Defender-Malwarebytes
- Any crucial line of business software or application

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### LIMIT USER ACCESS

- Make sure a separate user account is created for each employee and require strong passwords
- Administrative privileges should only be given to trusted IT staff and key personnel
- Employees should only be given access to the specific data systems that they need for their job
- Employees should not be able to install any software without permission

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### OVERVIEW – KEY TAKEAWAYS

- Ensure network infrastructure and cabling are in good shape
- Ensure no computer or server is operating past its recommended end-of-life
- Ensure emails are hosted with trusted partners, backed-up, and secured
- Backup Everything, preferably one local and one cloud minimum
- Update and install patches on all hardware and software as soon as they become available
- Secure WiFi if applicable
- Limit user access

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## THANK YOU

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