



Avon Lake
Regional Water

Water Utility Adaptation

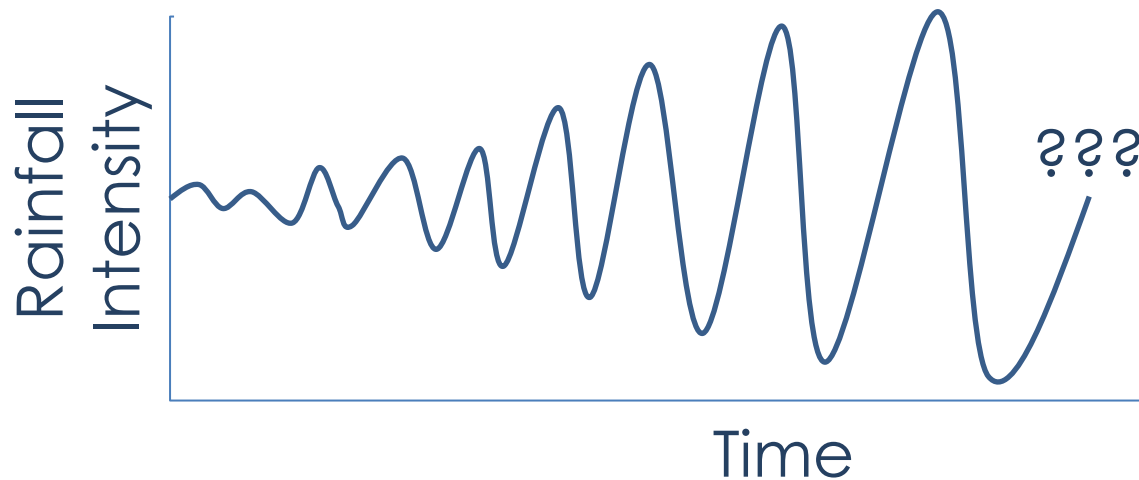
Water Resilient Cities

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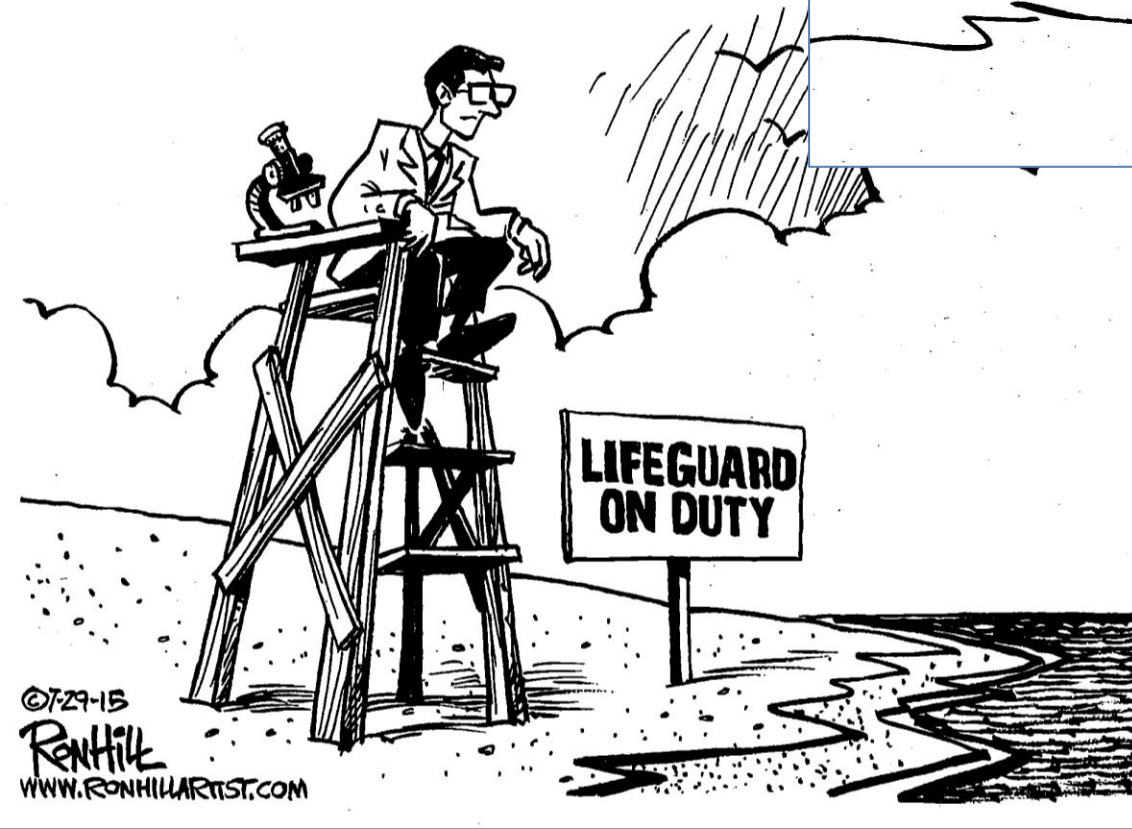
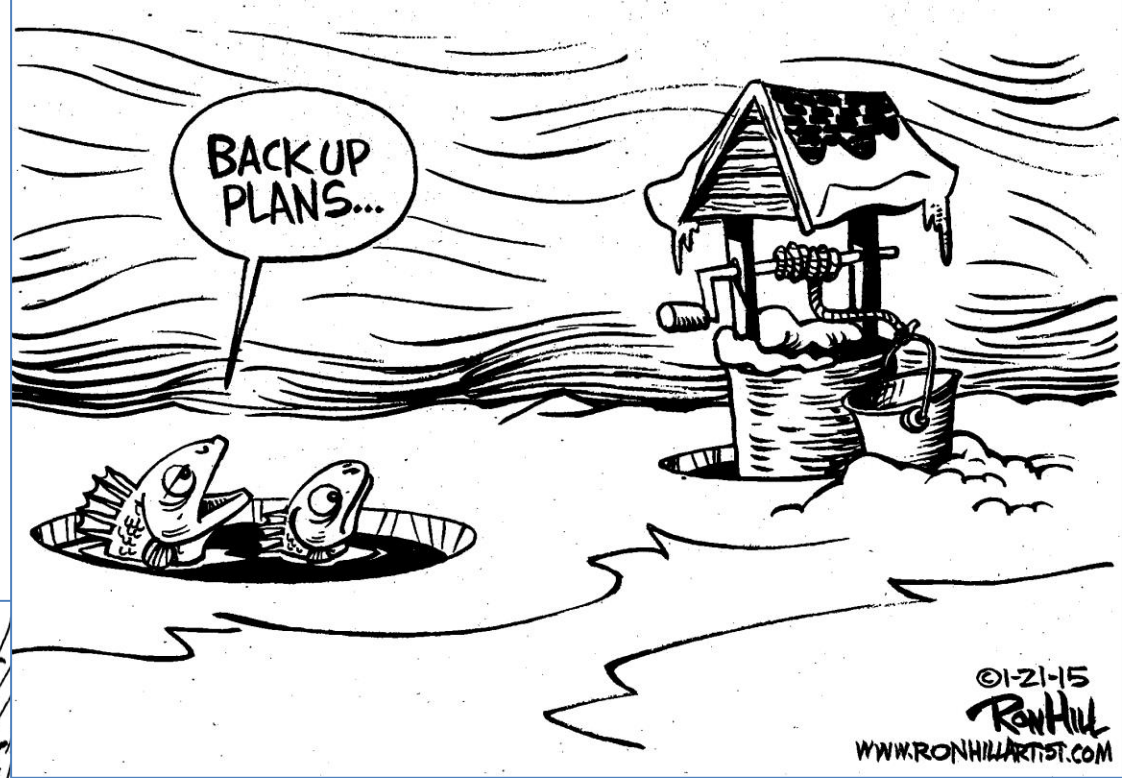
For what should utilities plan?



- For the worst?
 - What is “the worst”?
- For worse than now, with flexibility?



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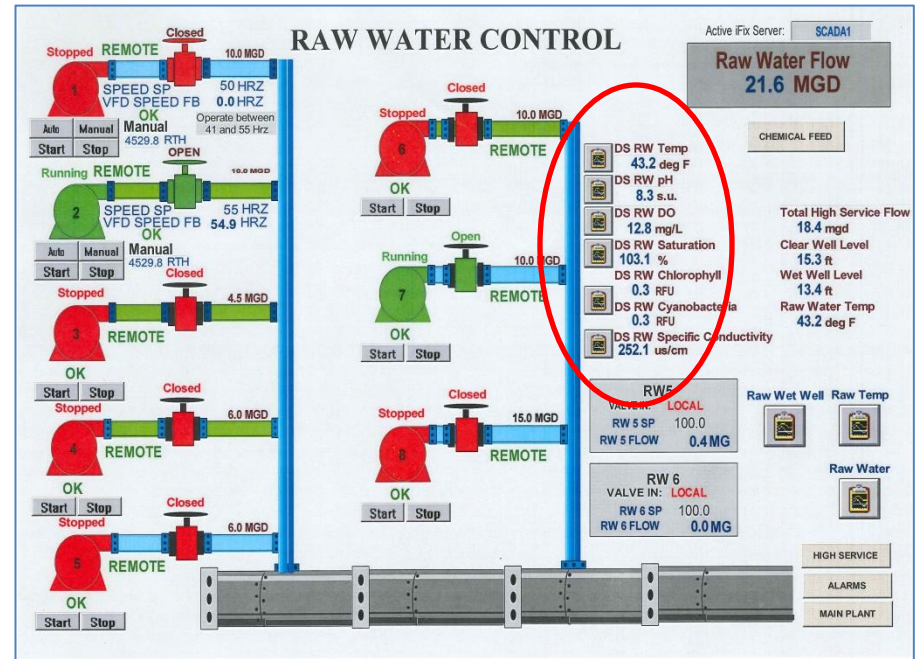
Water Treatment/Distribution

- Supply
- Detection
- Treatment
- Storage
- Power

Water Trmt/Distrib - Supply

- Multiple sources – emergency intercnxns

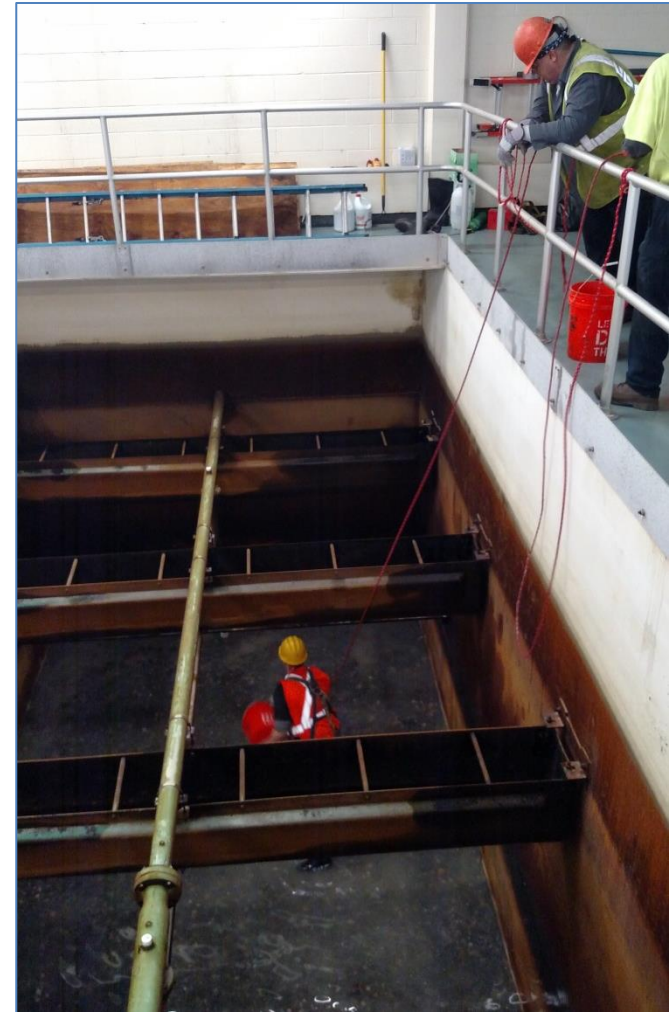
Water Trmt/Distrib - Detection



- On-line data sonde detects changes in water quality & alerts operators

Water Trmt/Distrib - Treatment

- Re-bedding 1/3 of filters to improve treatment ability
- Adding ability to add powder activated carbon (PAC) in more locations



Water Trmt/Distrib - Storage

- Increasing storage at plant & in system



Water Trmt/Distrib - Power

- Adding additional emergency power capability
- Already have separate, redundant power feeds
- Buying 100% green power



Wastewater – Coll'n/Trmt

- Collection
- Storage
- Treatment
- Power

WW – Coll'n/Trmt - Collection

- Combined sewer separations
- Wet weather studies
- Lateral loan program
- Storage - TBD



WW – Coll'n/Trmt - Treatment



- Wet weather capacity
- Chemically augmented biological nutrient removal

WW – Coll'n/Trmt - Power



- Replacing emergency generator
- Will investigate energy recovery



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Other



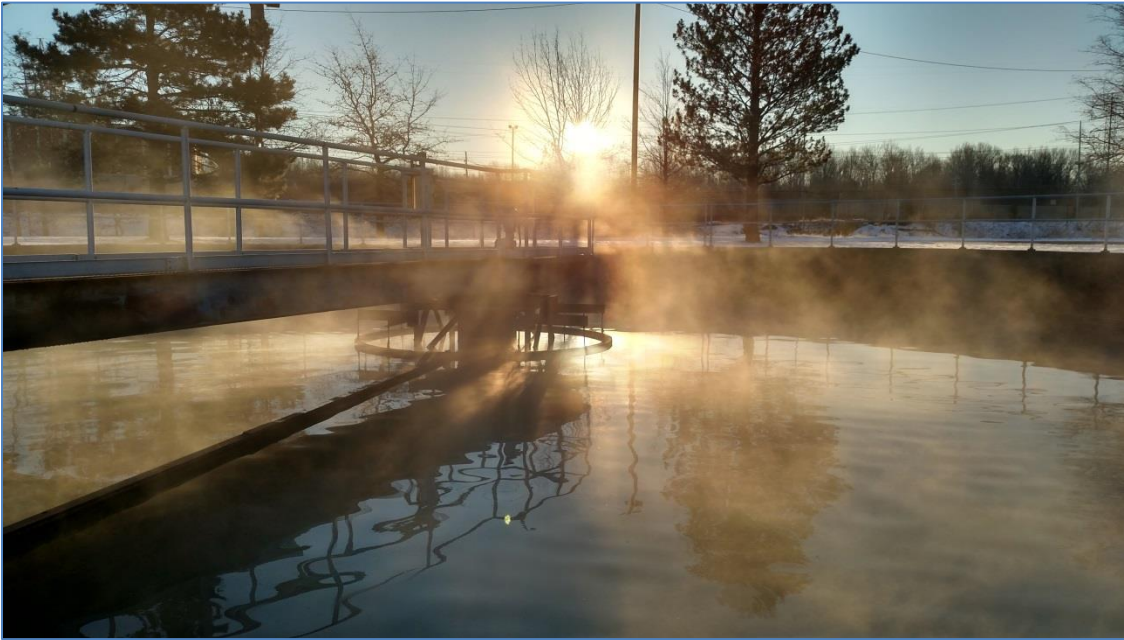
GREAT LAKES
BIOMIMICRY



Cleveland
Water Alliance



Questions?



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