

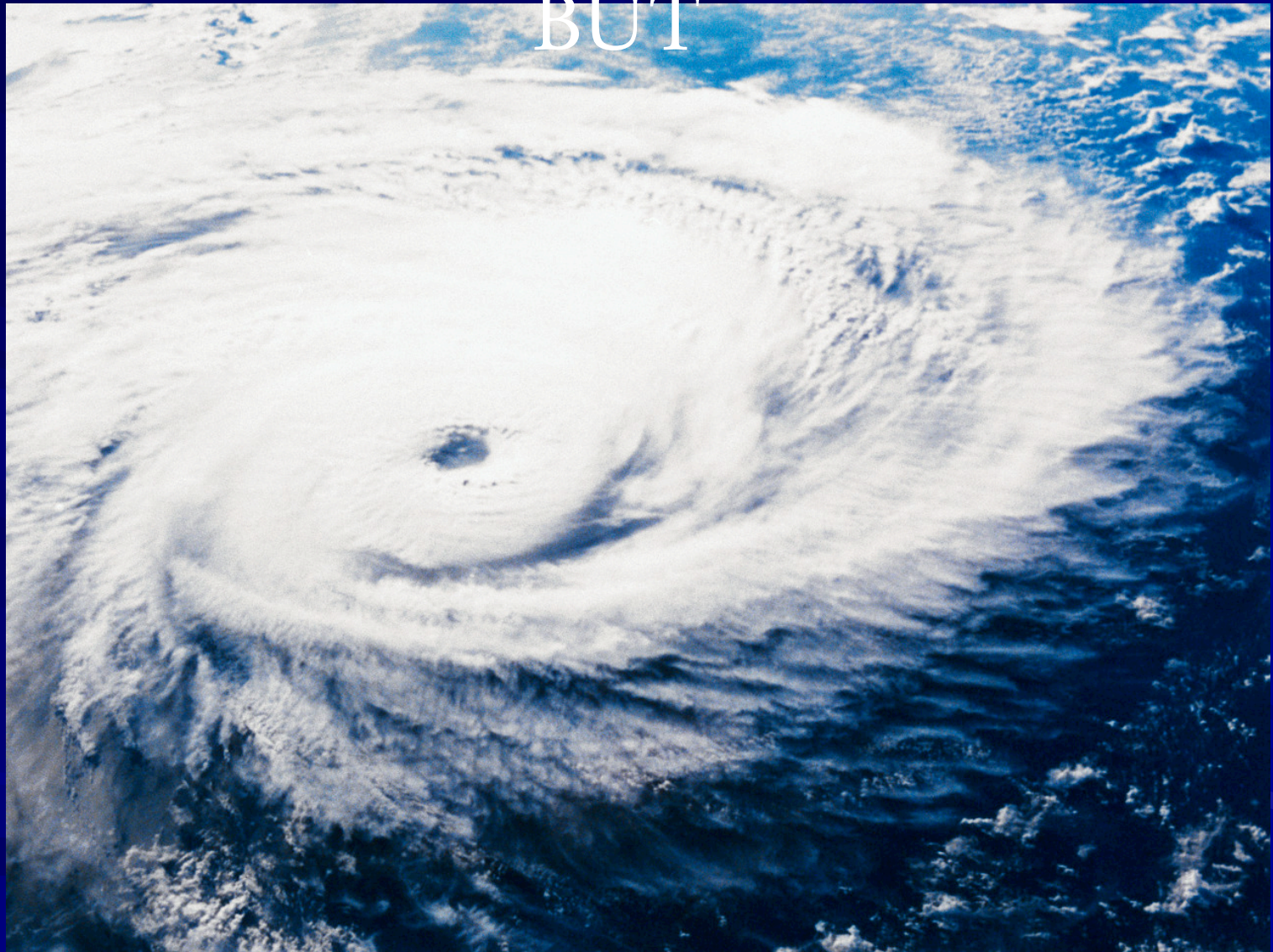
Small Water System Drought Preparedness

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Can You See it coming?

- For the better part of 18 months, cloudless blue skies and high temperatures have shriveled crops and bronzed lawns from North Carolina to Alabama, quietly creating what David E. Stooksbury, the state climatologist of Georgia, has dubbed “the Rodney Dangerfield of natural disasters,” a reference to that comedian’s repeated lament that he got “no respect.”
- “People pay attention to [hurricanes](#),” Mr. Stooksbury said. “They pay attention to tornadoes and earthquakes. But a drought will sneak up on you.”

You can't control the forces of nature,
BUT



you can see it coming

You can't control the forces of nature
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you can see it coming



Inadequate Water Supply



SWS Operational Challenges

- In adequate planning and managing of systems.
- We can see the forces of nature coming **if we look.**
- SWS can see a draught problem coming if they would only look at well depth, production data and water table variations.
- SWS should know their financial status.

SWS Operational Challenges

- Limited sources of supply (1-3 wells).
- Limited storage. (Storage to help during maintenance and repair).
- Limited operational expertise.
- Not close to other systems for emergency assistance or inter connections.
- Limited knowledge of water quality changes and changes in water table depth.

SWS Operational Challenges

- Limited sources and source monitoring.
 - Need all sources on line to meet system demand. Will be out of water if any of their wells fails during peak demand periods.
 - Hard rock wells which are low producers seem to produce better when not operated constantly.
 - No attempt to monitor well production through water production meter, electrical meter, duration of operation.

SWS Operational Challenges

■ Limited Storage

- Storage is helpful when you need to pull well pump and replace it.
- Storage is helpful for peak fire fighting demands.
- Storage helps hard rock well production if well is allowed to rest and recover.

If you have to haul water, Storage is helpful.

SWS Operational Challenges

- Limited operational expertise and source monitoring.
 - No one regularly responsible of operation oversight and routine maintenance.
 - Part time over sight with no alarms to alert of problems that lead to outages
 - Water Leaks.
 - Power outages, blown fuses, mechanical failures.
 - No outside assistance identified in advance.

SWS Operational Challenges

- Not close to other systems for emergency assistance or connections.
 - Lanare CSD 3 miles
 - West Goshen 2 miles
 - Alpaugh 10 miles
 - Others.
- What can be done to haul water.

SWS Operational Challenges

- Do they have storage?
- Where would they haul water from?
- Do they have agreement with this system?
- What is the quality of water that will be hauled?

SWS Operational Challenges

- Limited knowledge of water quality changes with changes in water table depth.
 - Water quality changes with depth of water table for
 - Arsenic
 - Nitrate
 - Uranium
 - Volatiles (PCE, DBCP, etc)

SWS Operational Challenges

- All systems would be better off if they saw a problem coming.
- All systems with proper planning and monitoring can predict problems in advance.
- Small systems should plan for inadequate source due to draught. Where can they haul water from and how will this be handled?

SWS Operational Challenges

- A lot of the SWS are not metered and do not know where the water is going.
- Metered rates save water and generate needed revenue.
- SWS have not upgraded distribution system pipes and are losing water and don't know how much.
- Waste water reclamation not easily undertaken by SWS.

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What SWS Should Do!

■ Improve their TMF

■ Technical

■ Managerial

■ Financial

What SWS Should Do!

- Monitor the well production.
 - Install production meters.
 - Read production meters.
- Monitor the water table.
 - Install depth to water monitoring and use it on monthly basis (static and pumping water level) and plot results.
- Monitor the water quality.
 - Sample well over time after well start up to determine water quality changes.

What SWS Should Do!

- Identify outside assistance and arrange communicate with them on the need for on call assistance in future.
- Locate replacement equipment that will be available when needed due to failure of existing equipment.
- Know Important Emergency Agency Phone numbers. Pump company, water haulers, nearby LWS, others....

What SWS Should Do!

- Set system water rates to assure reserve funds for emergencies.
- Identify funding sources that can address emergencies.
- Keep California Department of Public Health informed of all changes.
- Contact California Department of Public Health Drinking Water Program for assistance.

What Can You Do?

- Contact a SWS that you know and tell them to start looking at the coming forces of nature.