The Future of Produced Water: The Future is NOW

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ODEQ's Role in Produced Water

* National
* Regional
* State

Oklahoma DEQ's Role

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Produced Water Activities to Watch

* Ground Water Protection Council
  * *Produced Water Report: Regulations, Current Practices and Research Needs*
* EPA
  * Effluent Limitations Guidelines
  * Water Reuse Framework
  * New Mexico/EPA MOU
* Oklahoma DEQ
  * OPDES Delegation of Produced Water Discharges

GROUNDWATER

PROTECTION COUNCIL

PRODUCED WATER REPORT

Regulations, Current Practices & Research Needs

Developing Solutions: Modular Approach

Produced Water Report Conclusions

* **Produced water reuse requires careful thought**
  - Reuse IS possible and may be cost effective in the right situations
  - Oil & gas companies and end users must work together to facilitate reuse
  - Regulators CAN looks for ways to allow reuse projects but MUST ensure these practices are done with proper environmental and public health protection

Regulatory Conclusion

- Expanding reuse opportunities may require regulatory or legislative solutions to issues such as:
  - Ownership of produced water
  - Transfer of ownership
  - Determination of liability
  - Human health and safety concerns
  - Environmental risk and mitigation concerns

ELG Review and White Paper

* All 11 oil and gas effluent limitation guidelines reviewed
* EPA met with stakeholders across the country
* White paper scheduled release was December 2019, February 2019, late March 2019, soon…

EPA's Water Reuse Framework

* First draft prepared late December 2018
* Meetings April 18 and May 9 with invited stakeholders
  * Oklahoma and Texas only states invited so far
* Top priorities
  * Potable reuse
  * Non-potable reuse
  * Produced water
* Final Framework to be released in September 2019 in San Diego

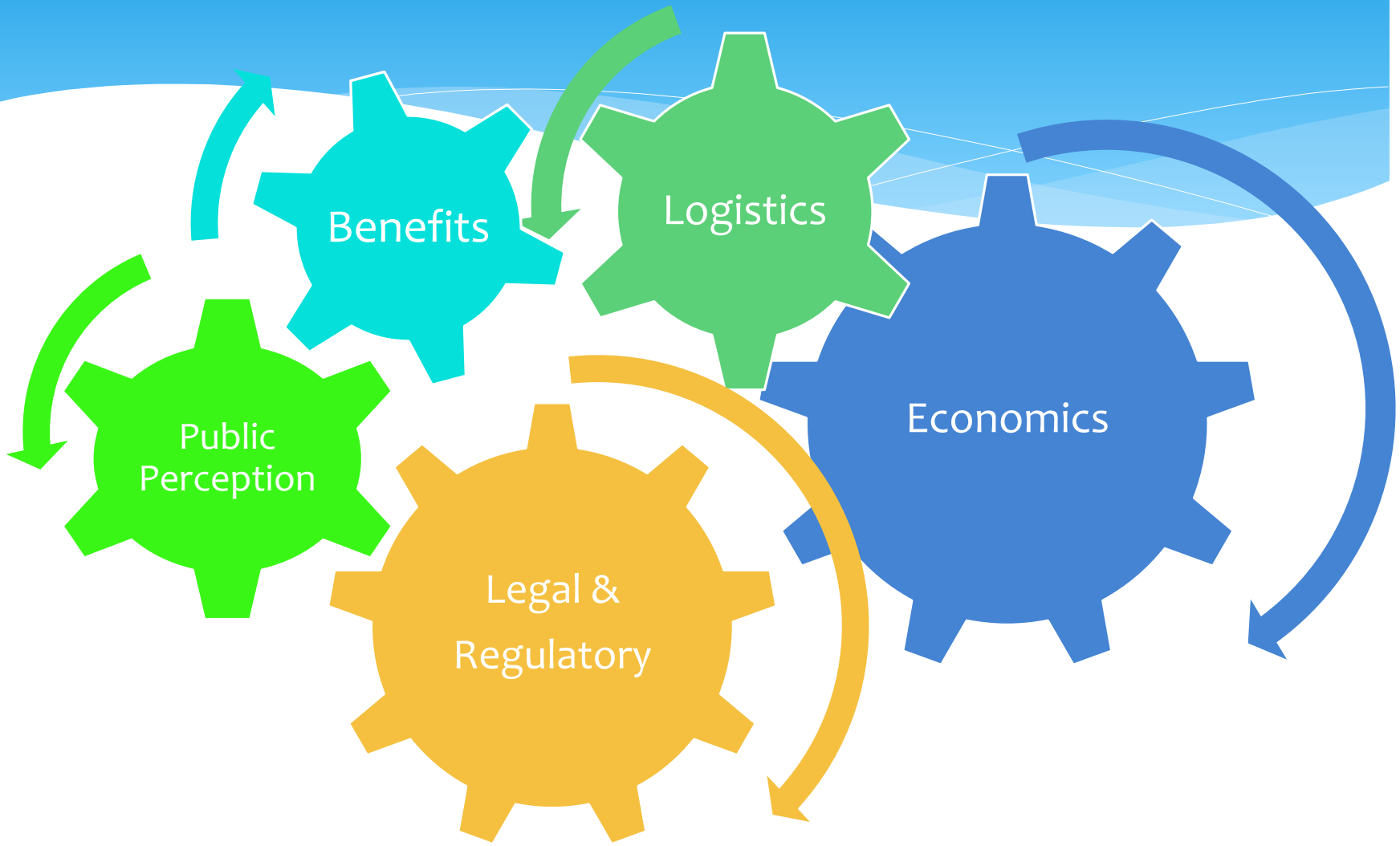
Produced Water Discharge in Oklahoma

* Currently prohibited in approximately 60% of state (east of 98th Meridian)
* Current discharge permits issued by EPA R6
* DEQ submitted a supplement to OPDES delegation
* R6 has completed reviewed and sent to EPA HQ

Keys for Successful Intentional Reuse

* Deliberate process
* Fit for Purpose
* Available Water
* Available Treatment
* Available Transportation
* Public education and outreach

Practical Considerations



Things to think about…

* It takes
  * 3 gallons of water to make 1 sheet of paper
  * 13 gallons of water to make 1 gallon of gas
  * 450 gallons of water to make 1 chocolate bar
  * 1799 gallons of water to make 1 pound of beef
  * 3400 gallons of water to make 1 smart phone
  * 62,000 gallons of water to make 1 ton of steel

What we try to avoid…

What we want to encourage…?

We may need to try unconventional methods to reach our goal.

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