NM Produced Water Research Consortium

Multi State Salinity Coalition – February 2020

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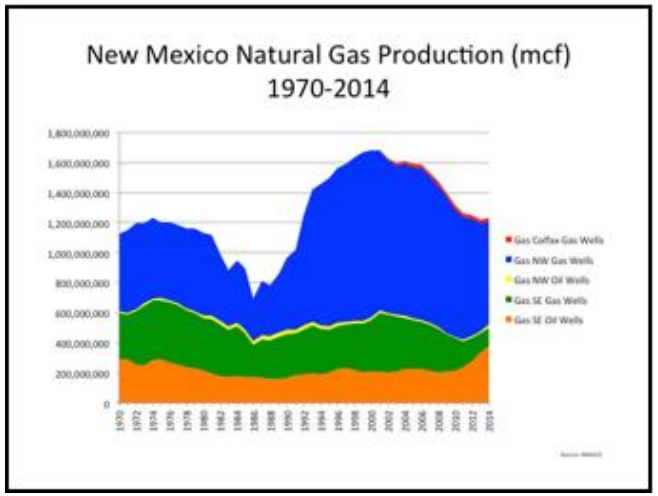
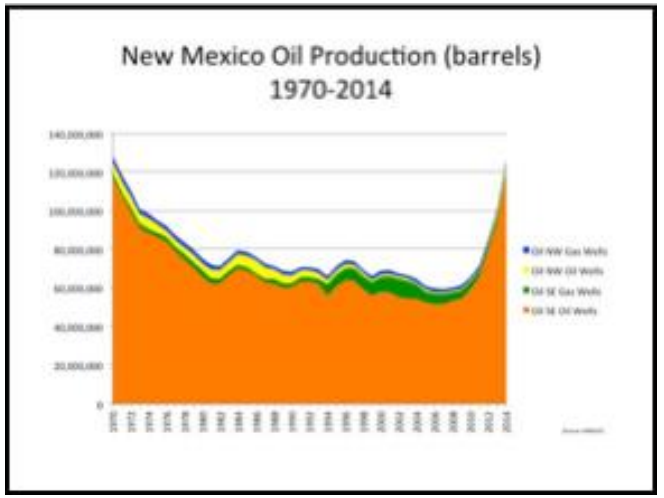
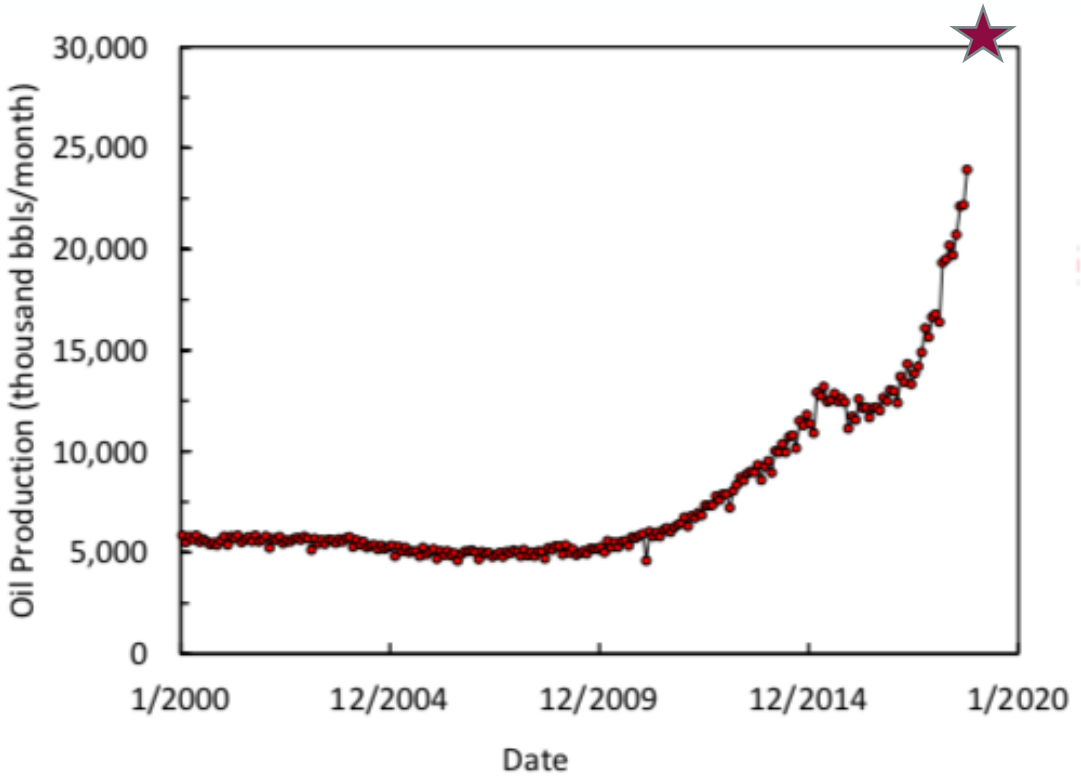
http://nmpwrc.nmsu.edu

PRODUCED WATER PRODUCTION CHALLENGES

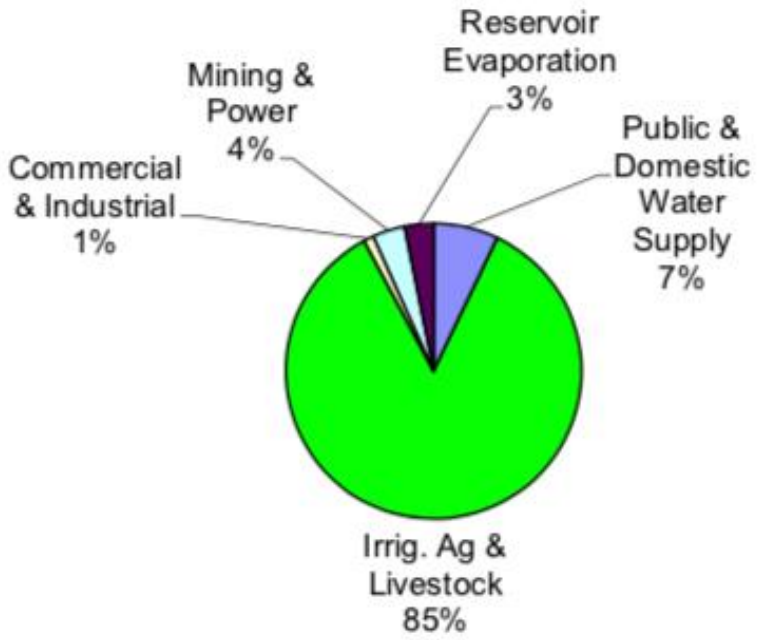






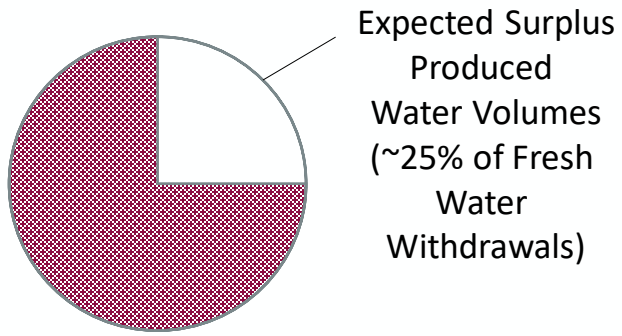
Average 4-5 bbls of produced water/ barrel of oil
~4 million bbls produced water/day (3 ABQ's)

NM PERMIAN BASIN WATER SUPPLY TRENDS DRIVING PRODUCED WATER REUSE



Eddy & Lea Counties
Total withdrawals = 427,800 AF/yr (3.3 B bbls/yr)

ANNUAL FRESH WATER WITHDRAWAL

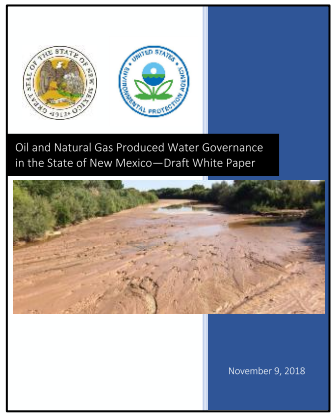


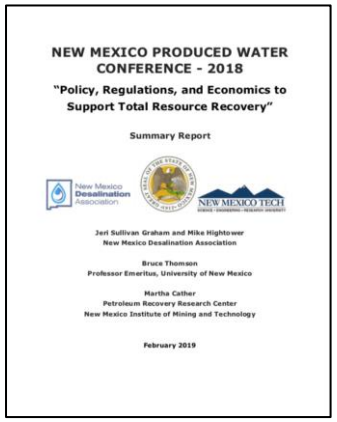
Surplus expected to be ~1 B bbls/yr (2-3 M bbls/day)

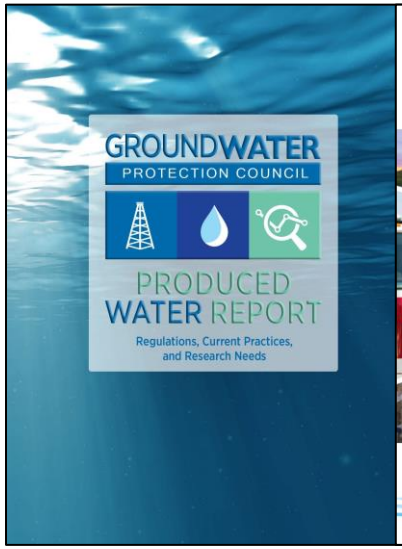
PROJECTED PRODUCED WATER SURPLUS

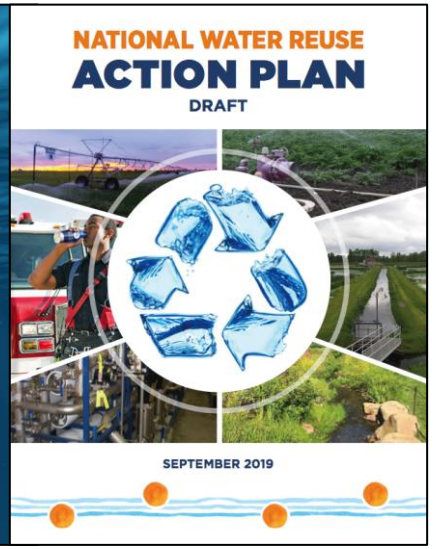
RECENT NM PRODUCED WATER REUSE EFFORTS

- NM EMNRD working group on streamlining produced water jurisdiction 2015-2017
- 2018 EPA MOU to explore produced water reuse intricacies in western states
- NM Desal Association Workshop on Produced Water Reuse – 2018 (160 attendees)
  - Major recommendation was to **“pursue a cooperative treatment technology evaluation program”**
- Input on GWPC produced water research needs report - 2019
- Increased DOE and BOR desalination research funding for produced water
- Coordinate with EPA to lead produced water efforts in new national water reuse program









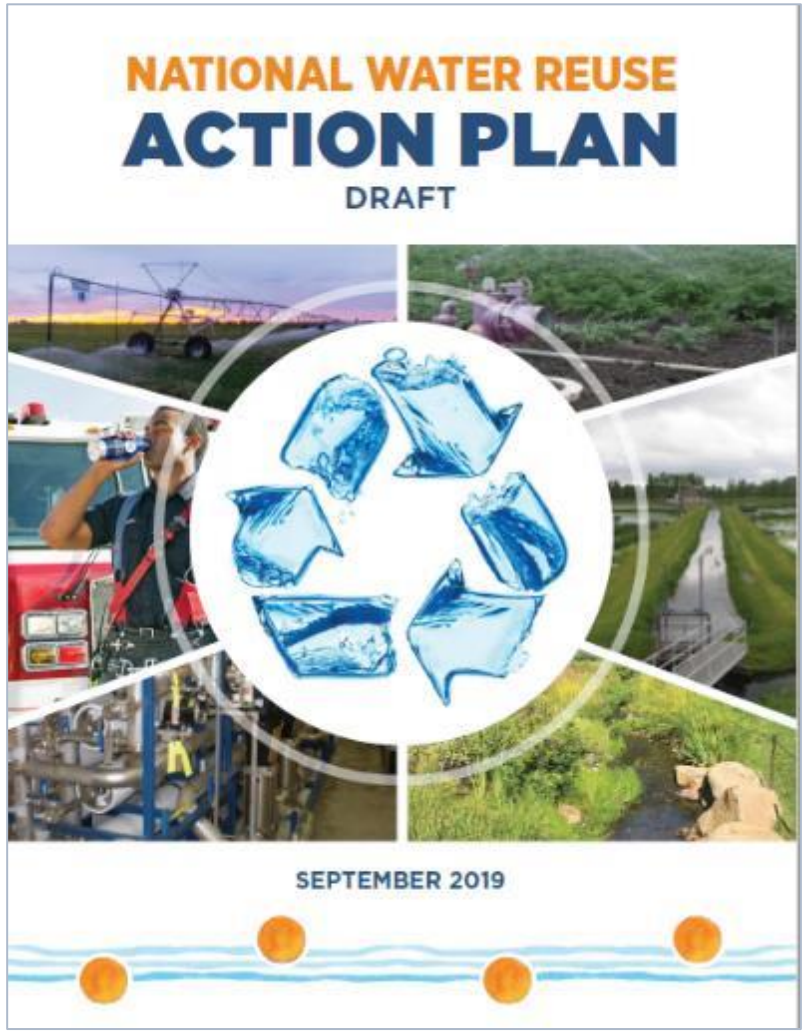
NM 2019 PRODUCED WATER ACT, HB 546

- Through the Act, statutory and regulatory authority for the reuse of produced water was modified:
  - Reuse inside oil and gas sector remains under the Oil Conservation Division (OCD) of the NM EMNRD
  - **Reuse outside the oil and gas sector, was designated to the NM Environment Department (NMED)**
- The Act encourages produced water reuse outside oil and gas to:
  - enhance fresh water sustainability,
  - reduce or eliminate fresh water use in the oil and gas sector,
  - support new economic development opportunities,
  - maintain public and environmental health and safety.

This transition is an emerging regional trend – OK and TX

National Water Reuse Action Plan

- Call to Action
- Section 1
  - The business case
- Section 2
  - **10 strategic objectives**
  - **46 proposed actions**
- Section 3
  - Looking forward



Draft - Sept. 10, 2019

Find the draft WRAP at:

https://www.epa.gov/waterreuse/water-reuse-action-plan

Release - Feb. 27, 2020

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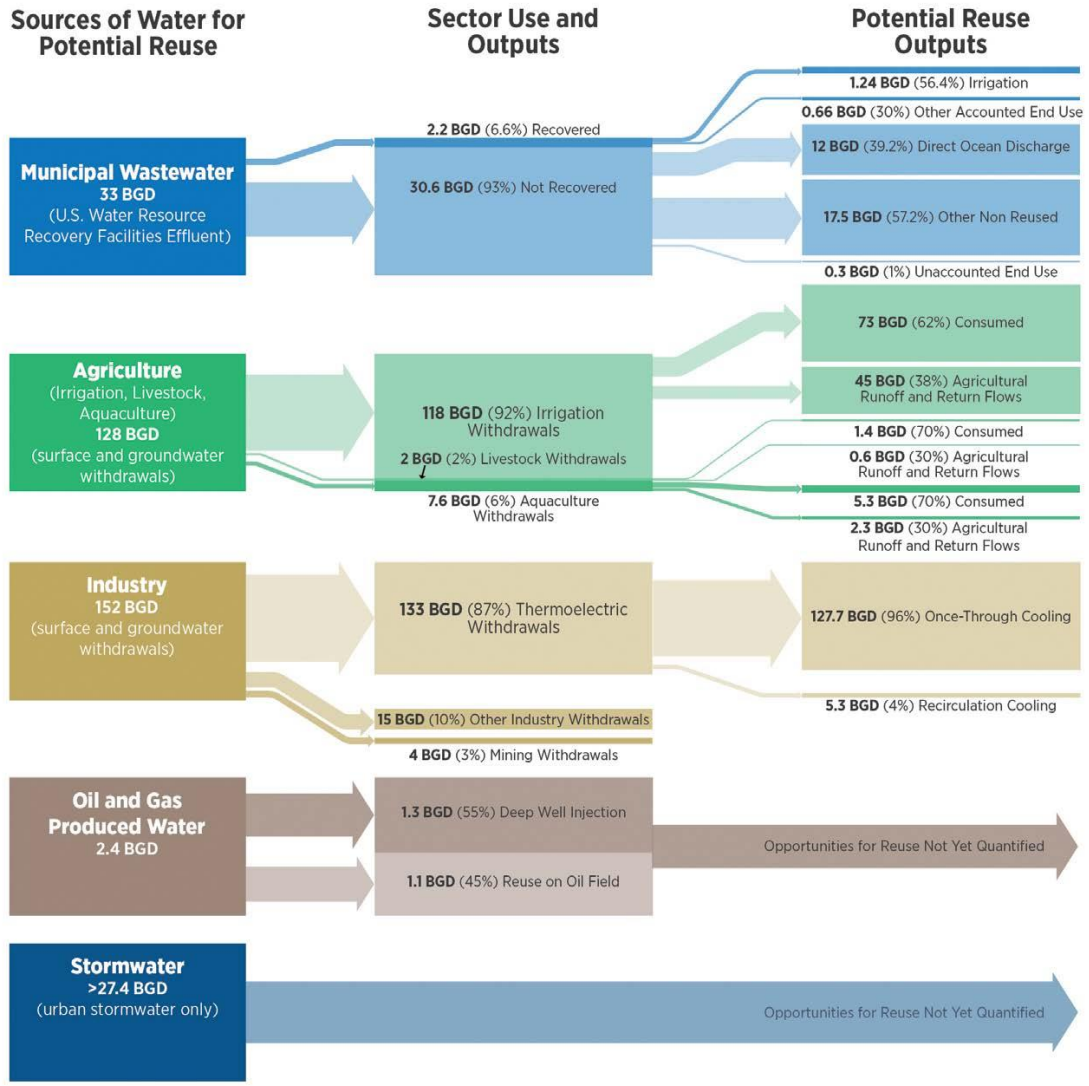
Sources of Waters and Potential Reuse Outputs

- Clear potential to reclaim more of nation's water
  - Nearly 350 BGD sources of water discharged
  - Over 280 BGD potentially available for reuse
- Sources* of water for potential reuse:
  - 33 BGD - Municipal wastewater
  - 128 BGD - Agriculture
  - 152 BGD - Industry
  - 2.4 BGD - Oil and gas produced water
  - >27.4 BGD – Stormwater



* Graphic and estimates from draft Action Plan, page 6

Example Actions

- **Action 2.1.1**: Develop a Federal Policy Statement to Support and Encourage Consideration of Water Reuse in a Watershed Scale Planning Context
- **Action 2.2.1**: Compile State Policies and Approaches to Implement Water Reuse Programs
- **Action 2.3.1**: Compile Existing Fit-for-Purpose Specifications
- **Action 2.4.2. Identify and Fill Science and Technology Gaps and Needs Inhibiting Greater Consideration of Off-Field Use of Treated Produced Water**
- **Action 2.6.1**: Compile Existing Federal Funding Sources for Water Reuse
- **Action 2.8.1**: Compile and Develop Water Reuse Program Outreach and Communication Materials