

# Non-Tributary Water Treatment – A New Water Resource



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Water Resources and  
Agriculture Review Committee

Legislative Council



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## Overview

- Colorado is short by 600,000 to 1,000,000 AF by 2050 (Statewide Water Supply Initiative - 2017 )
- Water storage projects cost - \$6,500 / AF of storage to \$10,000 / AF of storage (Glade reservoir and Halligan Reservoir – Northern Colorado)
- Non-tributary water is available from:
  - Mining operations
  - Oil and Gas operations
  - Agriculture return flows from Non-Tributary source water
  - Others
- Non-tributary water can be used to extinction unlike tributary water which can only use historic consumptive use
- How can the State of Colorado encourage the treatment of non-tributary water for beneficial use and reuse?

## Existing water laws and regulations – Produced Water

- 2007 – Vance case vs. State of Colorado – this case was lost by the State of Colorado and required Coal Bed Methane projects (SW Colorado) to determine the amount of tributary water in the produced water discharge and to augment for that tributary water.
- 2007 – Wellington Water Works vs. Dumont – this was tried in Water Court – Division 1. This case stated that if the produced water was non-tributary (as determined by the State Engineer), then the Water Court can provide a “vested” water right as long as the mineral is being extracted. This would be true for any mineral such as mining or oil/gas minerals.
- 2009-2010 – HB 1303 (09) and SB 52 (10) allow for the beneficial use of non-tributary water developed from mineral leases. This was based on the Wellington case stated above
- Statewide Discharge Permit – CDPHE, in 2012, formulated the statewide discharge permit system (COG8400000 – CDPHE General Permit for Dischargers from Produced Water Treatment facilities). This allows for a federally permitted discharge (NPDES) to the surface complying with all of the EPA and CDPHE requirements for water quality. We would want to encourage similar law for mining, agricultural and other non-tributary water discharging into the water system.

## Tax Incentive or Tax Credit

- US Water Reuse Council encourages tax credits for reuse of non-tributary water through treatment and discharge to the surface (see document attached)
- This is new water that would never be on the surface otherwise. In the case of produced water, the water is disposed of into a Class II injection well controlled by COGCC.
- This tax credit will encourage the development of new water at a much lower cost than conventional surface water storage
  - Cost of treatment of non-tributary water is \$600 to \$800 per AF of equivalent storage
  - This new clean water will benefit the streams and rivers with instream flows
  - Atlantic Council – Sustainable water is key for our future – non-tributary water is a potential asset that is currently wasted reducing available water and increasing carbon footprint for energy development
  - New water is necessary for the future of the State of Colorado

## Current Practices

- Evaporation – agriculture and mining operations currently use evaporation and storage ponds for water treatment. While this adds water to the water cycle through evaporation, this water cannot be readily used for beneficial use on the surface
- Deep Well Injection – oil and gas as well as other treatment processes utilize deep well injection for disposal (Class II injection wells controlled by COGCC). This water is lost to the surface for eternity in practical terms.
  - The energy used in deep well injection is 20 to 30 percent of the energy brought to the surface. If treatment were used, this would reduce the carbon impact as the energy used for treatment is 5 to 8 percent, which is significantly lower. This would in turn reduce the carbon footprint for deep well injection significantly.

# Steps Needed to Encourage Non-Tributary Water Discharges

- Legislation on Ownership, Liability and Treatment – In the western States of Texas, New Mexico and Oklahoma (see Legislative Council Staff memo) recent legislation encourages non-tributary use, thereby allowing freshwater resources to be preserved for ever-increasing competing uses by:
  - Encouraging and promoting the development and methods to economically process, treat and recycle non-tributary water resources
  - Designating the parties who shall own and be responsible for the handling, transfer and disposition of non-tributary water
  - Encourages upstream users by limiting the liability of laws like RCRA as long as all permits are obtained and maintained
- We are asking for similar legislation to compliment the existing laws and regulations for the State of Colorado
- Tax Incentive – we believe that a tax incentive be provided for the produced water discharged to the surface. Texas proposed a \$1/bbl tax credit. This will promote investments in rural areas and will provide encouragement for this type of water resource
- Encouragement of COGCC, DNR and CDPHE to work together to help implement this type of activity to generate new water for the state of Colorado

# Proposal

- This proposal for the development of non-tributary water treatment is to encourage adding new water to the water cycle
- Studies have shown that treatment of non-tributary water is a significant add to our water system and provides new water at a lower cost
- In the State of Colorado, the amount of produced water per year exceeds 40,000 acre feet of non-tributary water. If used in agriculture with a 33% consumptive use, this would represent an asset of 120,000 acre feet per year.
- The Atlantic Council and the Water Reuse Council suggest that the best alternative to encourage companies to provide this treatment is through a tax credit program. This will benefit the companies by allowing for new technologies to be employed. This will benefit the State of Colorado by providing new water to the overall water system

## What we are asking

1. Provide a bill that will provide a tax credit for the investment into the treatment of non-tributary water.
2. Provide legislation to help address and clarify ownership and related limitations of liability, thereby encouraging technology treatment/reuse investment and related innovation. This is similar to other western states.
3. Encourage the State Engineer, COGCC and CDPHE to work together to expedite permitting and implementation of the treatment of non-tributary water for beneficial use