

Oil and Gas Well Construction Water Needs in Colorado

»» Water for Oil and Gas
Well Construction in
Colorado

Per Well Hydraulic Fracturing Demand

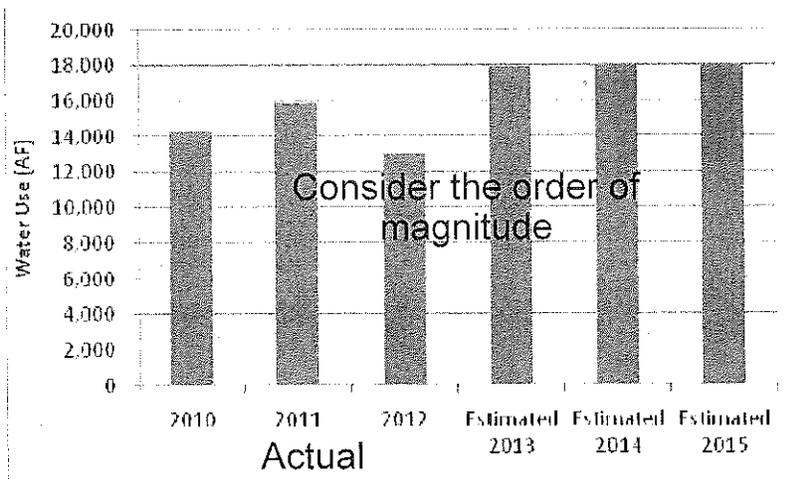
- ▶ Amount of water used per well
 - 1-5 million gallons per well (3-15 acre-feet¹)
 - More water used for horizontal drilling
 - 80% of wells (in Colorado) now use horizontal drilling

1. An acre-foot is approximately equal to 326,000 gallons.
Typically, an acre-foot is enough water for 2-3 households for a year.

What Does This Mean To Colorado's Limited Water Resources?

- ▶ What is the total amount used annually for fracking?
- ▶ How does this compare to other uses of water in Colorado?

Statewide Fracking Water Use



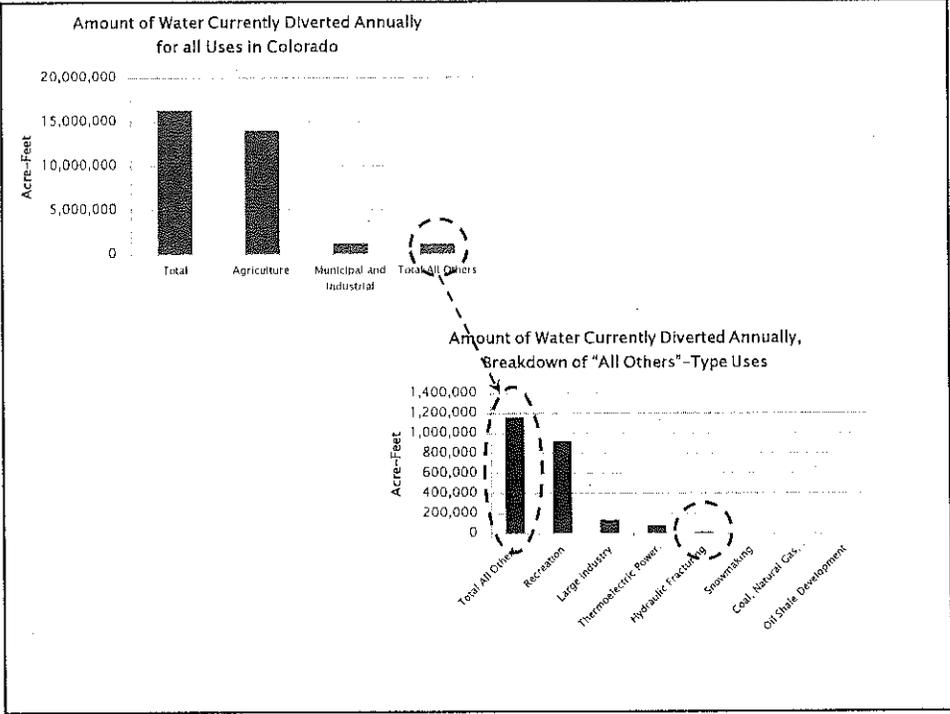
◦ Future trends are difficult to predict

Source: COGCC
2013

Colorado Water Diversions

- ▶ Total annually (all uses) = 16,400,000 ac-ft
 - Agriculture = 14,000,000 ac-ft
 - Municipal and Industrial = 1,200,000 ac-ft
 - All others combined = 1,200,000 ac-ft
 - Hydraulic fracturing ≈ 14,000 ac-ft

- ▶ diversions, not consumption



Oil and Gas Well Demands

» Water Sources

Potential Sources

▶ Water must be legally allowed

- Leased or purchased irrigation water (surface water)
 - Must be changed, public process
- Municipal lease/purchase (industrial uses)
 - Raw or treated water
 - Effluent
- New diversion, in priority
- Tributary ground water (requires augmentation)
- Denver Basin nontributary ground water
- Other nontributary water
- Produced water
- Recycled



Additional information



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Denver Basin Ground Water, *outside* Designated Ground Water Basins

