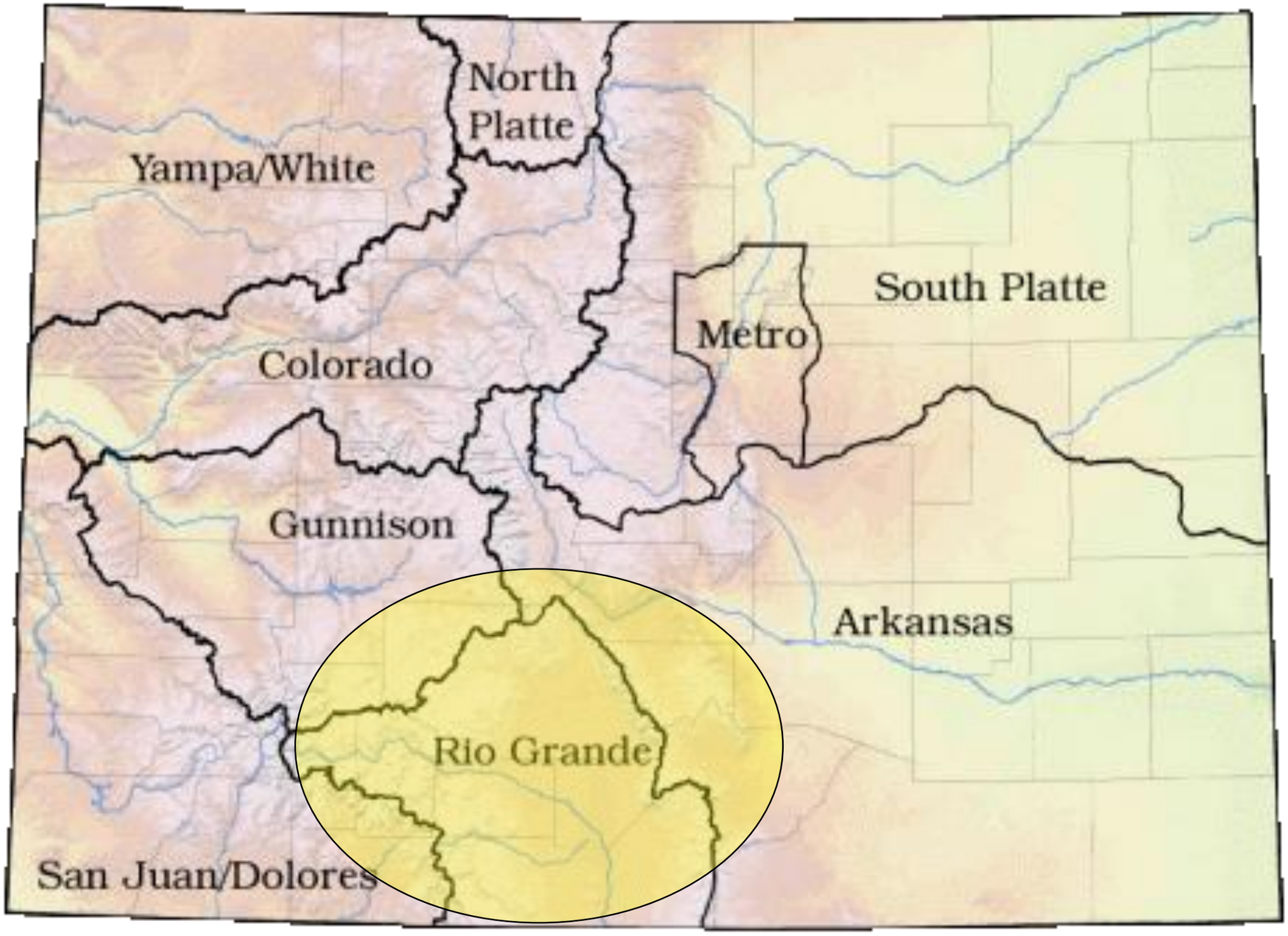
Rio Grande's Water Future

Shared Goals, Shared Responsibility

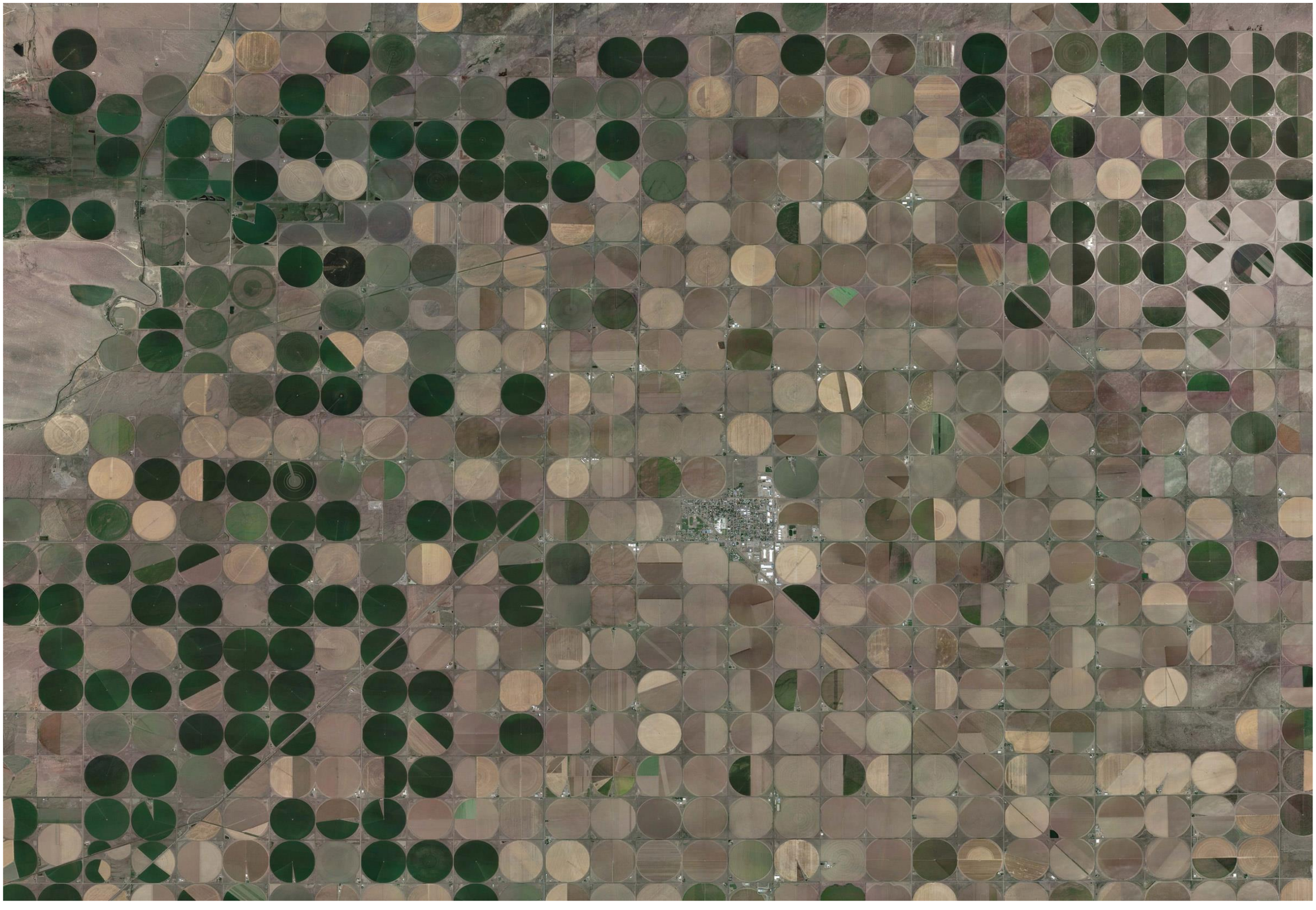
Kevin Rein, P.E., State Engineer
Division of Water Resources

COLORADO
Division of Water Resources
Department of Natural Resources

Rio Grande Basin



Rio Grande Basin



Recent Events

- September 23, 2015
  - State Engineer files Rules in Division 3 (Rio Grande Basin) Water Court,
  - "Rules Governing the Withdrawal of Groundwater in Water Division No. 3 and Establishing Criteria for the Beginning and End of the Irrigation Season in Water Division No. 3 for all Irrigation Water Rights,"
  - "Groundwater and Irrigation Season Rules for Division 3" or "Rules"

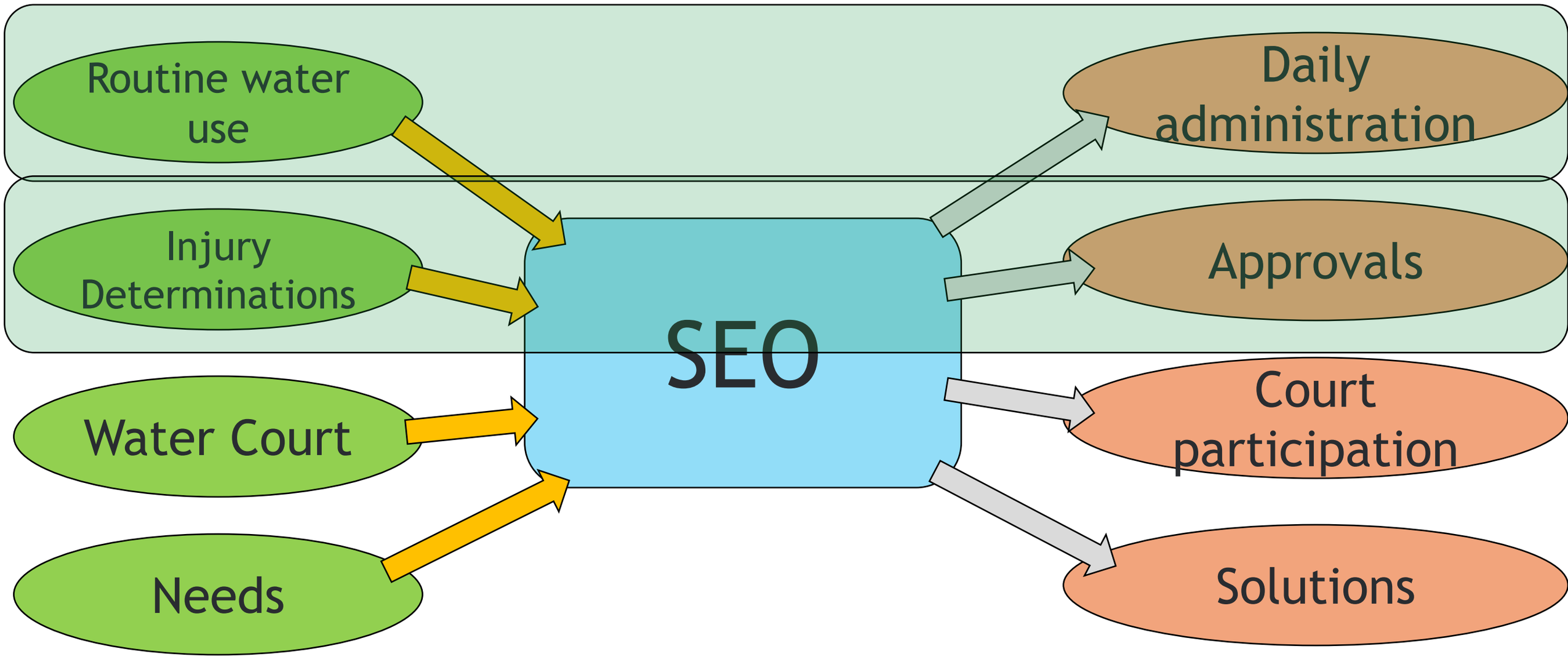
Recent Events

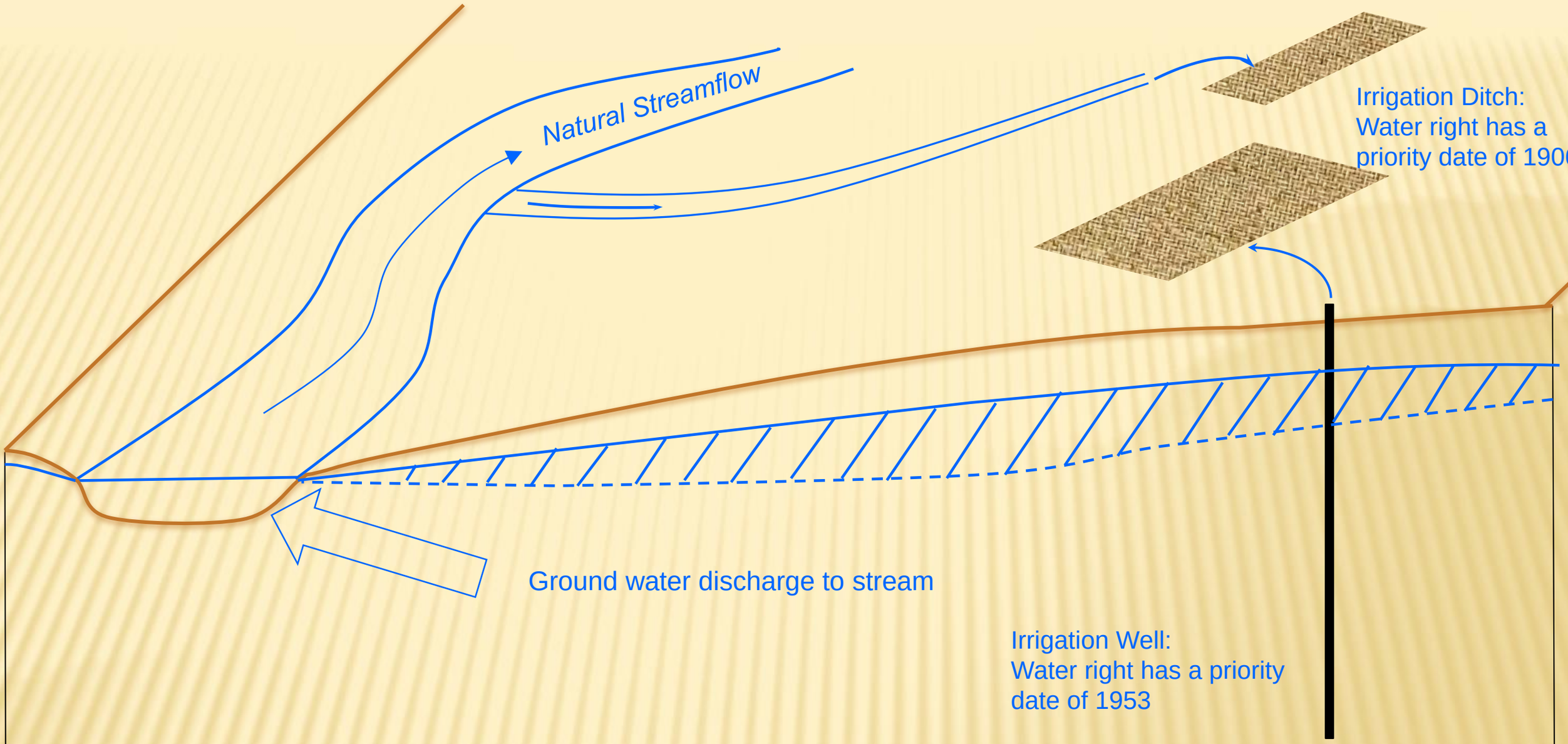
- March 15, 2019
  - Water Court judge issues her opinion, approving the rules as filed,
  - “Findings of Fact, Conclusions of Law, Judgment and Decree,”
  - Rules are final

Tonight's Discussion

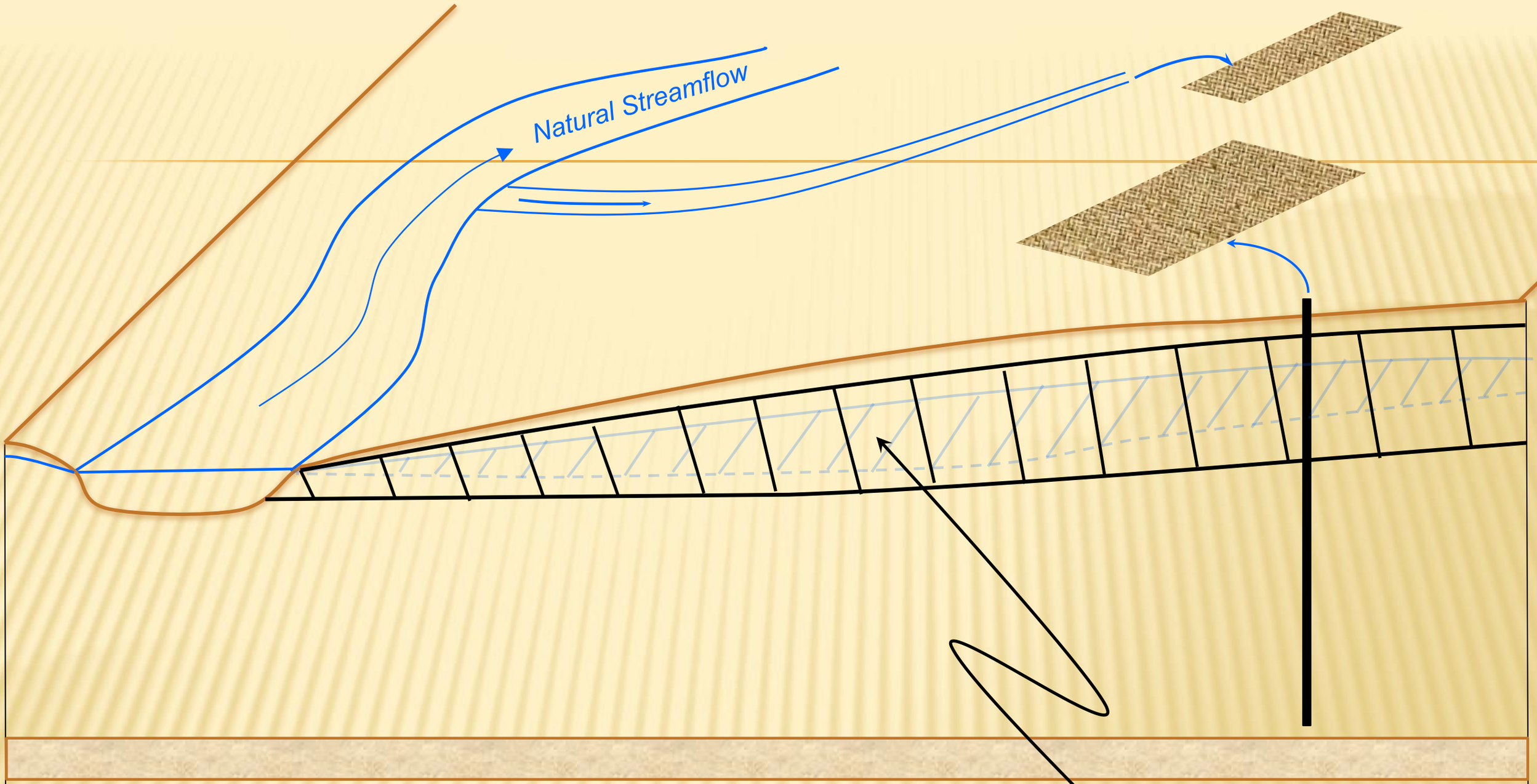
- What does this mean?
- How does it affect the Rio Grande Basin ("Basin")?
- How and why is the State (State Engineer's Office or Division of Water Resources) involved?

State Engineer's Office Role





1. Stream depletions



1. Aquifer sustainability
   - between 200,000 and 400,000 acre-feet below the storage level that was predicted to exist on January 1, 1976

Surface Water Depletion

- Determining the effect
  - Time; when does the depletive effect occur at the stream,
  - Location; where on the stream, relative to vested water rights, does the depletive effect occur,
  - Amount; for the time increment, at the location, what is the volume (or rate) of the depletion.
  - How is the time, location, and amount determined?

Ground Water Administration, Other Basins

- South Platte River basin promulgated Ground Water rules in 1974
- Arkansas River basin, initiated rules in 1973 but did not develop rules until 1996

Ground Water Administration, Rio Grande

- 1975, State Engineer attempted ground water rules,
  - Legally contentious, dynamic
  - Waited for the “Closed Basin Project”
- Well use has been administered, permits and decrees,
- Still no rules to address pumping depletions to surface water

Ground Water Administration, Rio Grande

- Senate Bill 04-222
  - "…the state engineer shall have wide discretion to permit the continued use of underground water consistent with preventing injury to senior surface water rights"
- Groundwater Management
  - Reconcile: surface water diversions, prior appropriation, and ground water development

Ground Water Administration, Rio Grande

- As a result
  - Ground water use faces curtailment, senior surface rights
- However, 37-92-501(4)(c)
  - "…state engineer shall not curtail… withdrawals from aquifers in division 3… included in a ground water management subdistrict…if the withdrawals are made pursuant to a **groundwater management plan**…"

Ground Water Administration, Rio Grande

- Scope of the Rules?
  - What is needed to allow withdrawals to occur:
    - Replace depletions
    - Attain sustainability (aquifer levels)
  - Authorize the use for the RGDSS Groundwater Model
    - Stream depletions
    - Status of aquifers

Ground Water Administration, Rio Grande

Difficulty with Sustainability, Compare…

- Replace depletions
  - Immediate impact to water rights, compact:
    - Real time, quantifiable
    - Time, location, amount; standard is met
- Aquifer sustainability
  - Long-term, perpetual:
    - Unique to the Basin
    - Statute; states objective, but no goals
    - Different strategy than depletions

Ground Water Administration, Rio Grande

- Aquifer sustainability; statutory law
  - 37-92-501(4)(a)(I):

"Use of the confined and unconfined aquifers shall be regulated so as to maintain a sustainable water supply in each aquifer system…"

  - 37-92-501(4)(c)

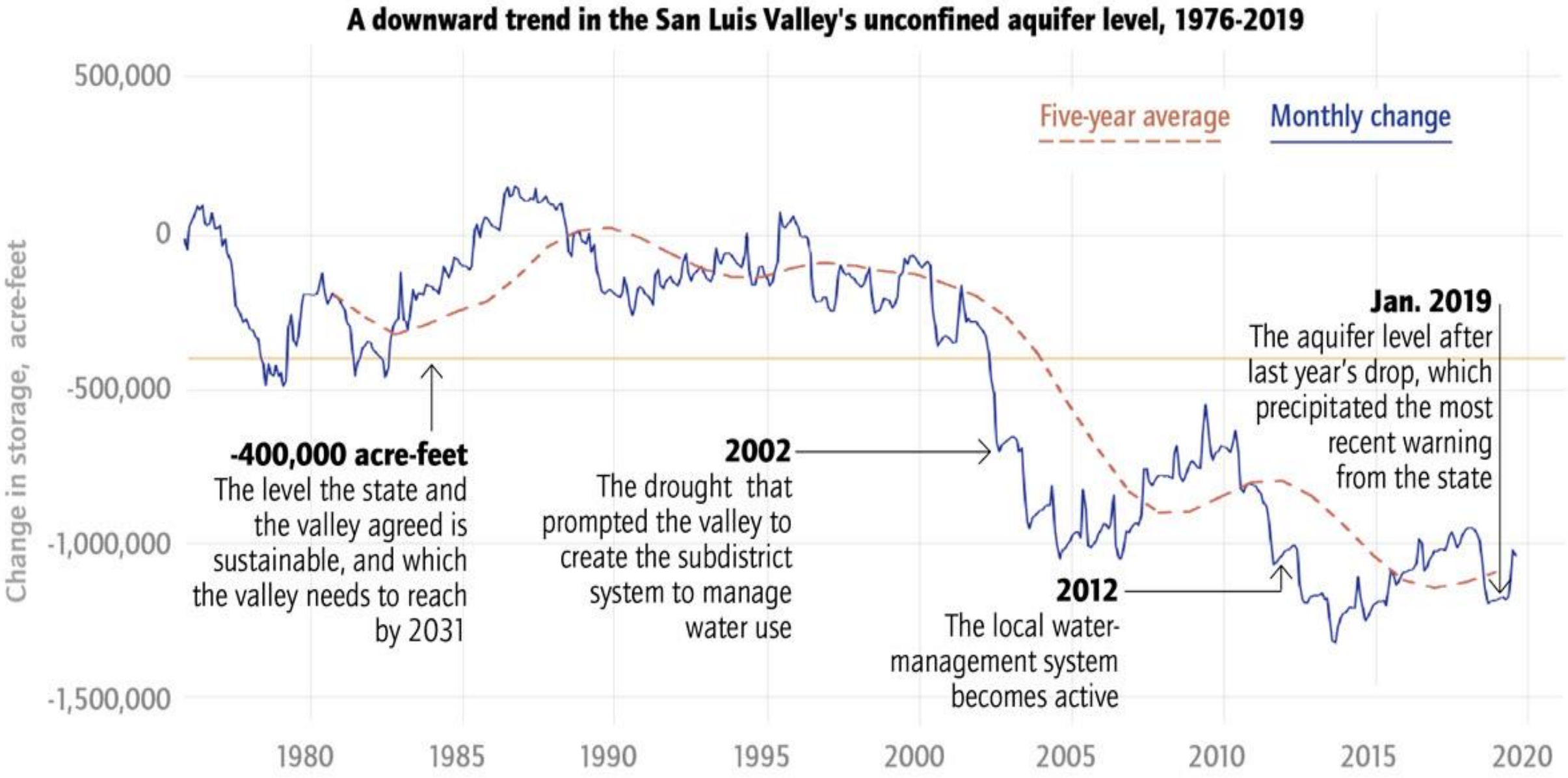
"The state engineer shall not curtail…withdrawals from aquifers in division 3 that are included in a **ground water management subdistrict** created…if the withdrawals are made pursuant to a **ground water management plan** adopted by the subdistrict…"

Ground Water Administration, Rio Grande

- Aquifer sustainability; Subdistrict 1 Plan of Water Management
  - Section 3.4.2:

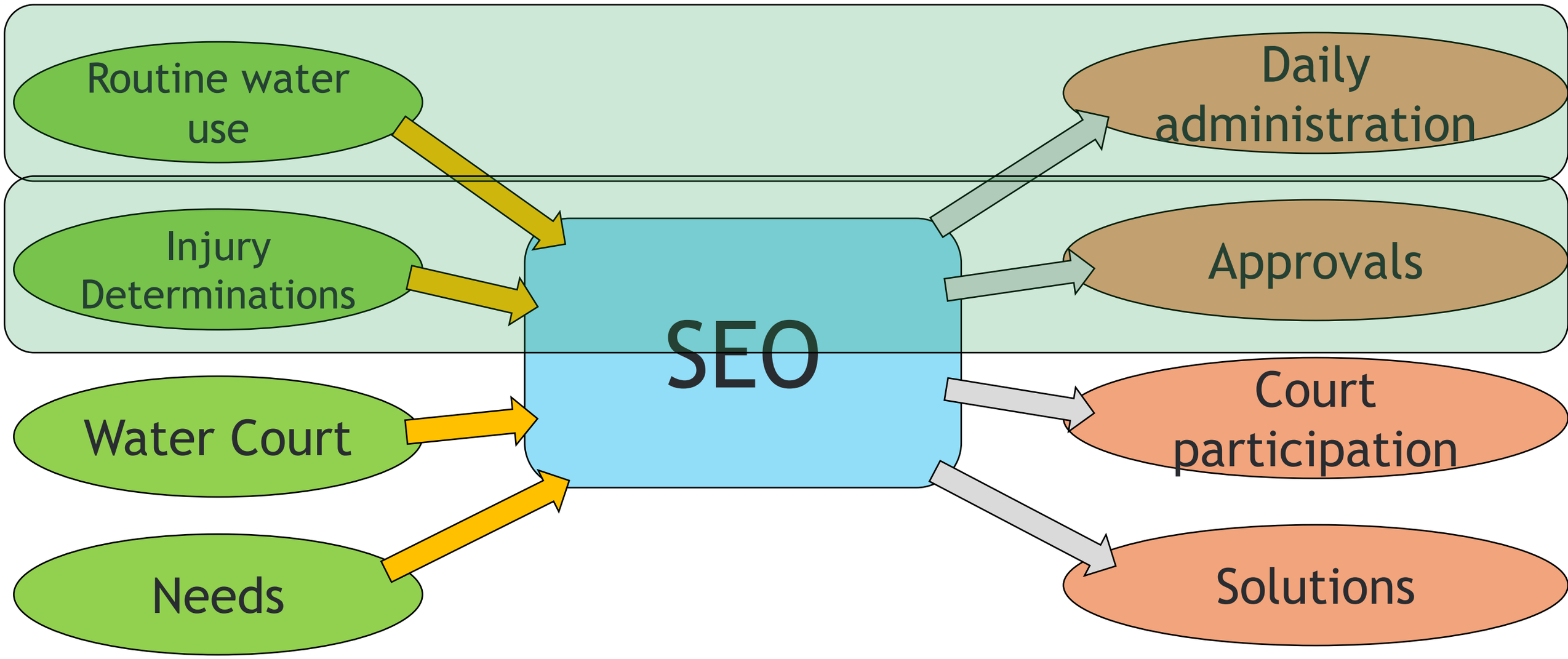
"…the program objective is to achieve the recovery of a Sustainable Aquifer level measured at Unconfined Aquifer storage levels between 200,000 and 400,000 acre-feet below the storage level that was projected to exist on January 1, 1976, within 20 years after judicial acceptance of this Plan…"

Unconfined Aquifer Sustainability



Source: Rio Grande Water Conservation District

State Engineer's Office Role



Sequence

- Legislated Concept, Aquifer Sustainability
- Rules Governing Withdrawal of Groundwater
- Groundwater Management Plan
- Sustainability Goals
- Annual Replacement Plan
- Well Pumping