

Overview of Water Resource Issues

Legislative Commission's Subcommittee to Study Water

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Nevada Division of Water Resources

Monday, February 8, 2016

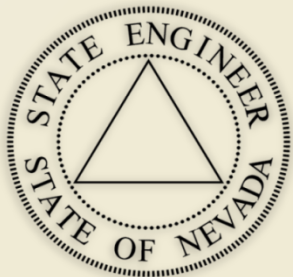
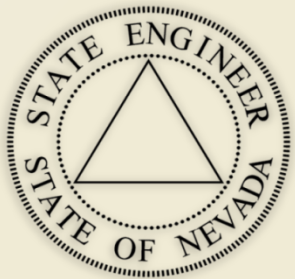


EXHIBIT D - WATER
Document consists of 24 pages.
Entire exhibit provided.
Meeting Date: 02-08-16

Issues

AB 198

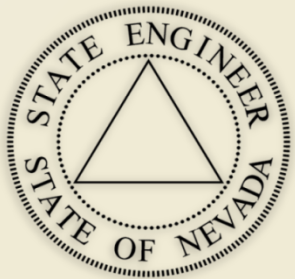
- Water use, surface water resources and groundwater resources
- Statewide gallons per capita per day (GPCD)
- Alternative sources of water, including
 - Desalination
 - Interbasin transfer of groundwater
 - Water conservation in urban and agricultural areas
 - Cloud seeding
 - Reuse, including gray water, wastewater and rain water
- Equitable apportionment of groundwater in basins that have boundaries outside the borders of Nevada



Issues

- Over-appropriated Basins
- Conservation Credits (use it or lose it)
- Domestic wells
- Sunset date for filing Vested Claims

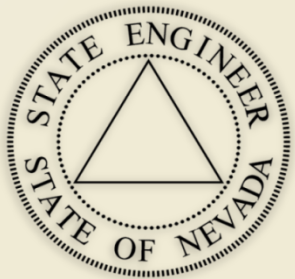
**2015
Session**



Issues

- Over-appropriated Basins
- Surface Water/Groundwater
 - Conjunctive Management
- Water for Mining and Milling
 - Temporary in nature
 - Pit Lake evaporation
- Domestic Wells
- Metering of all water use
- Perennial Yield
 - Capturing discharge is not environmentally friendly
- Wildlife Permits (who should be able to apply)
- Wild Horses

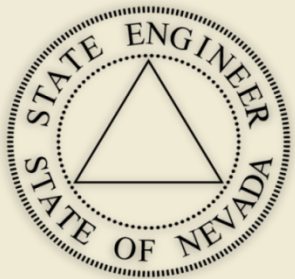
Listening Sessions



Recommendations Only!

- Water Conservation Plans
- Installation of meters on all water use
- Use It or Lose It
- Thermoelectric power plants – dry cooled or similar water efficient technology
- Home Owners Associations – some CC&R's may be contrary to water conservation measures

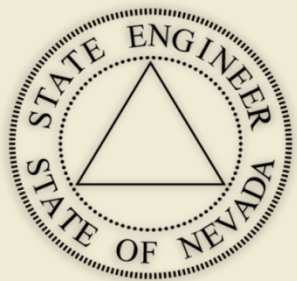
Governor's Drought Forum



Recommendations Only!

Governor's Drought Forum

- Over-appropriated Basins
- Adaptive Management
- Clarify fundamental water management principles in statute
- Domestic wells – outside watering only during times of curtailment
- Explore exemption for small scale precipitation capture (rain barrels)
- Explore judicial education on water law

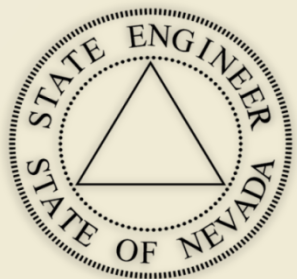


Over-Appropriated Basins

Critical Management Area Designation 534.110(7)

Any basin in which withdrawals of groundwater consistently exceed the perennial yield of the basin.

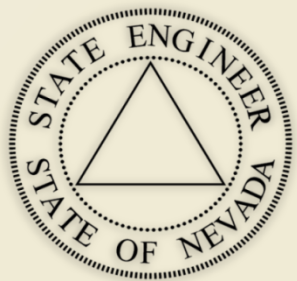
If a basin has been designated as a critical management area for at least 10 consecutive years, the State Engineer shall order that withdrawals, including, without limitation, withdrawals from domestic wells, be restricted in that basin to conform to priority rights, unless a groundwater management plan has been approved for the basin pursuant to NRS 534.037.



Over-Appropriated Basins

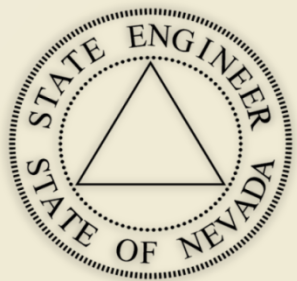
State Engineer's Groundwater Management Plan:

- 1. Curtail pumping***
- 2. Curtail pumping***
- 3. Curtail pumping***
- 4. Curtail pumping***

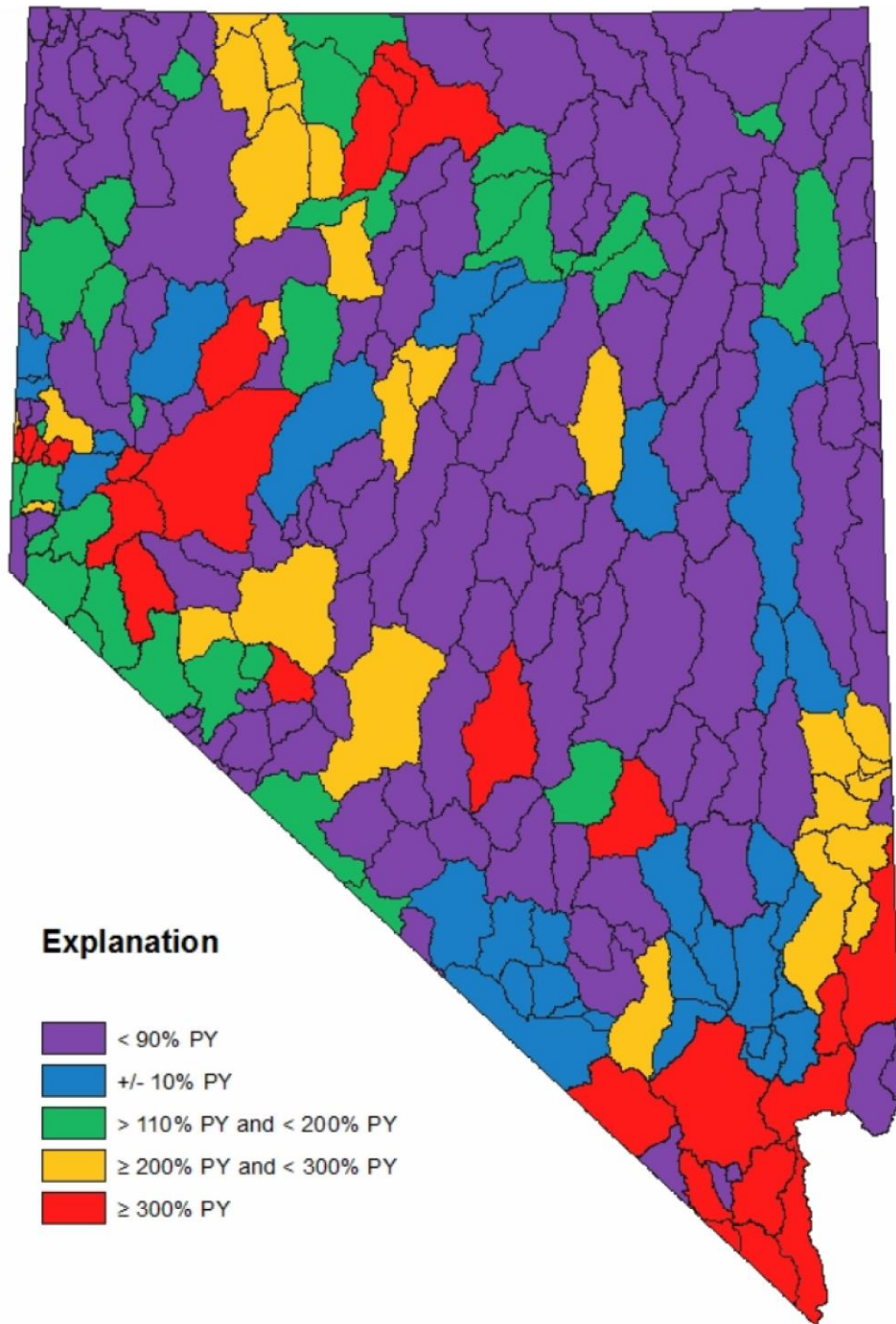
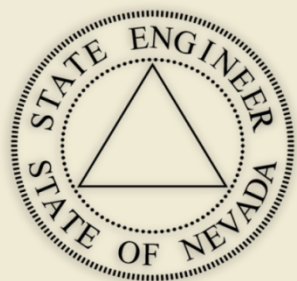


Over-Appropriated Basins

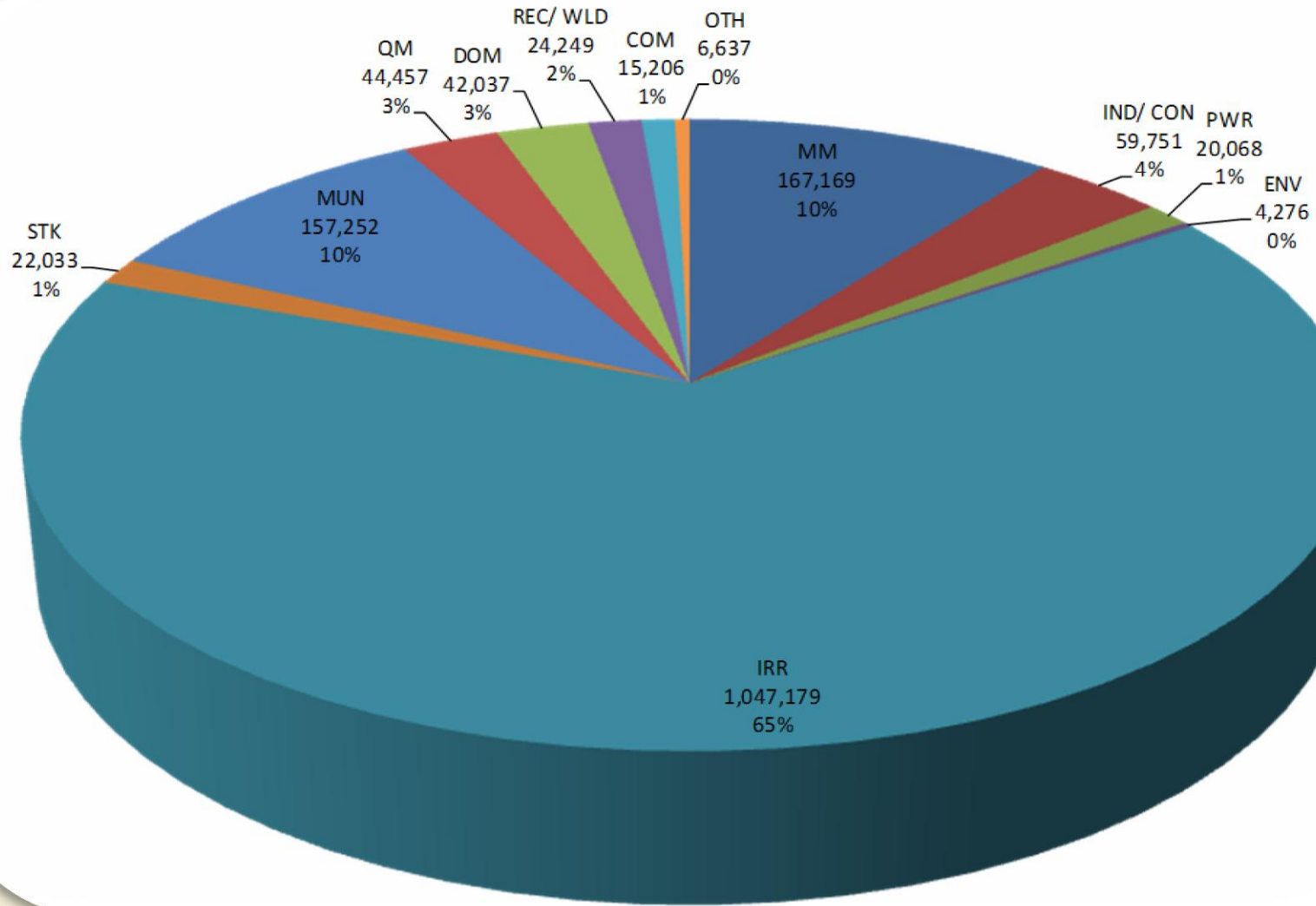
- Need a statutory framework to provide stakeholders the ability to create and adopt a groundwater management plan for approval by the State Engineer's Office.
- The framework needs to allow for maximum flexibility in terms of what tools can be used to bring a basin back to a sustainable level.



Ratio of Committed Water Resources to Perennial Yield by Basin



Statewide Pumpage by Manner of Use (2013)

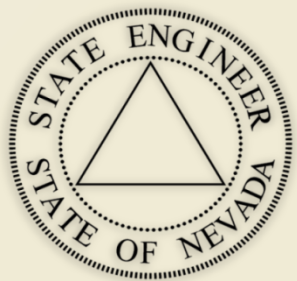


Actual Pumpage – 1.6 million acre-feet
Statewide Perennial Yield – 2.0 million acre-feet

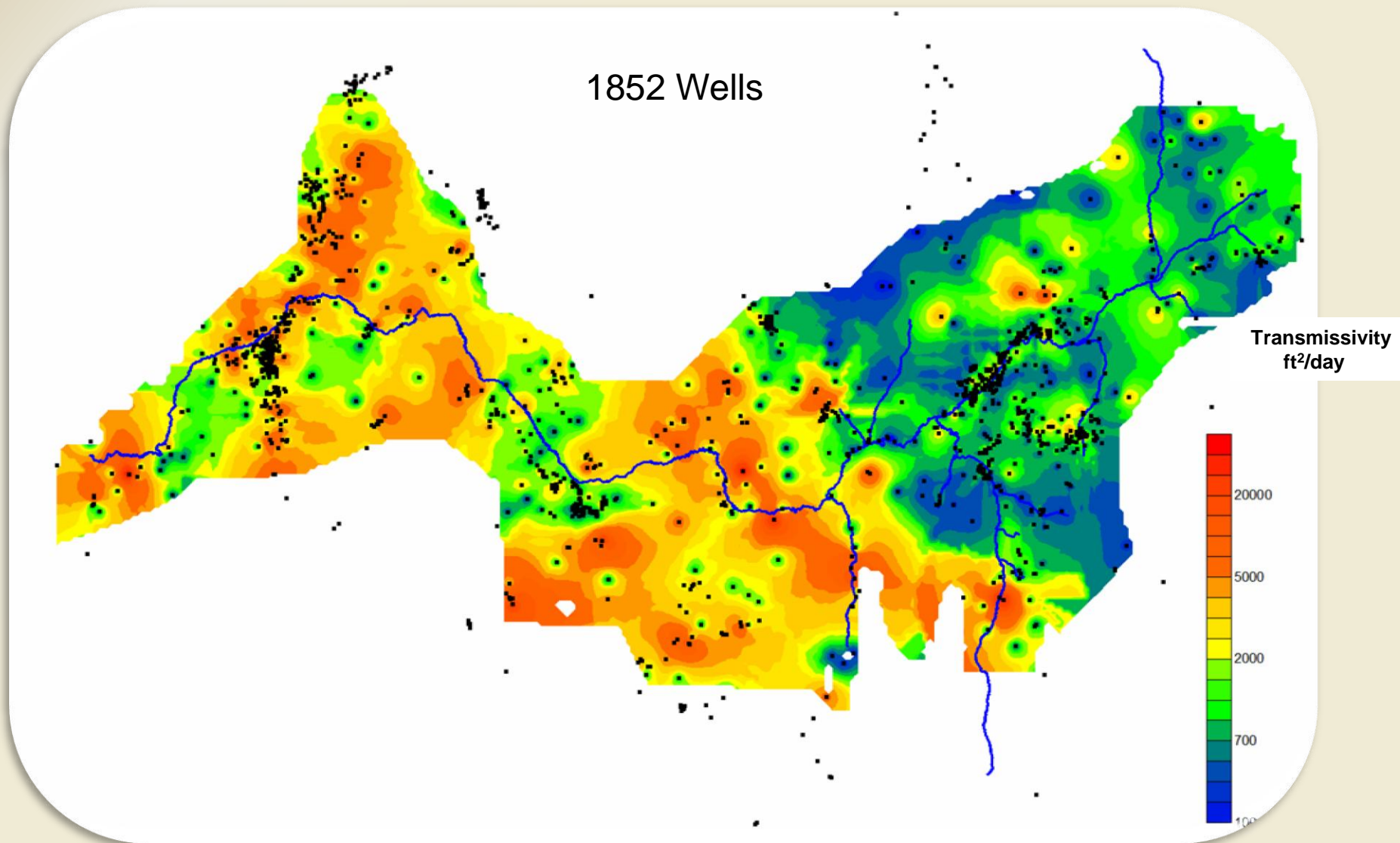
Conjunctive Management

Surface Water – Groundwater Connectivity

Need statutory framework to better define how the two can be managed together.

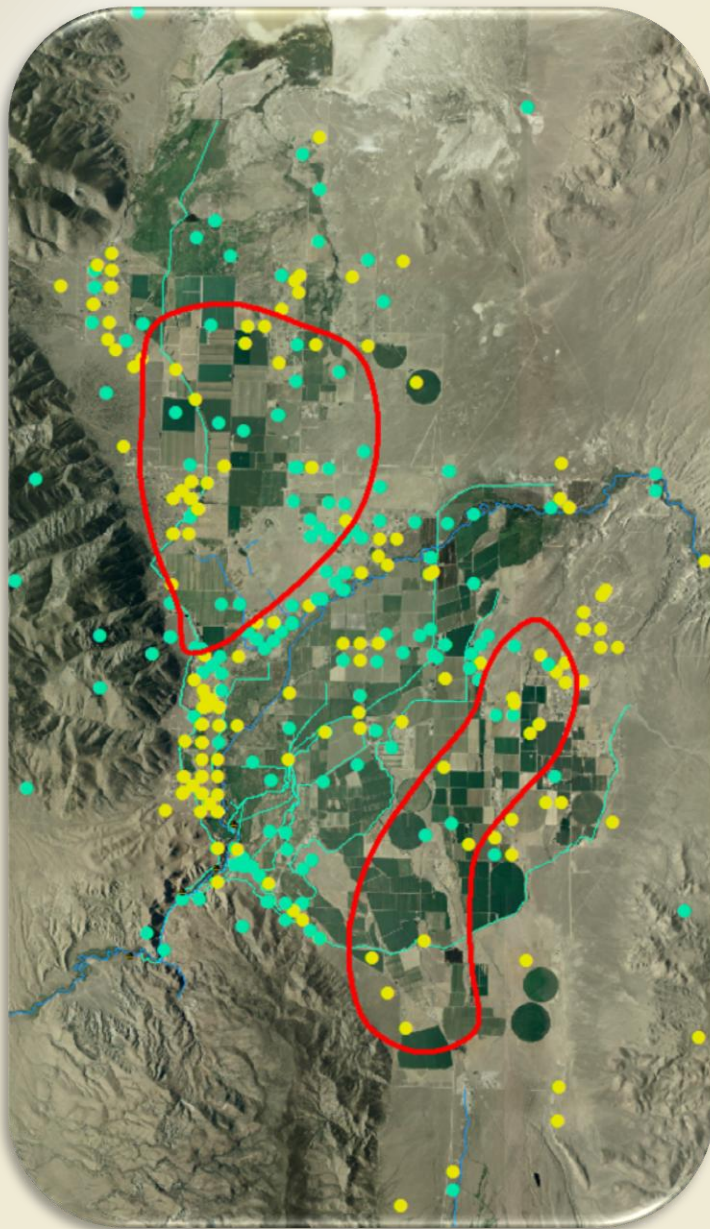


Humboldt River Capture Model

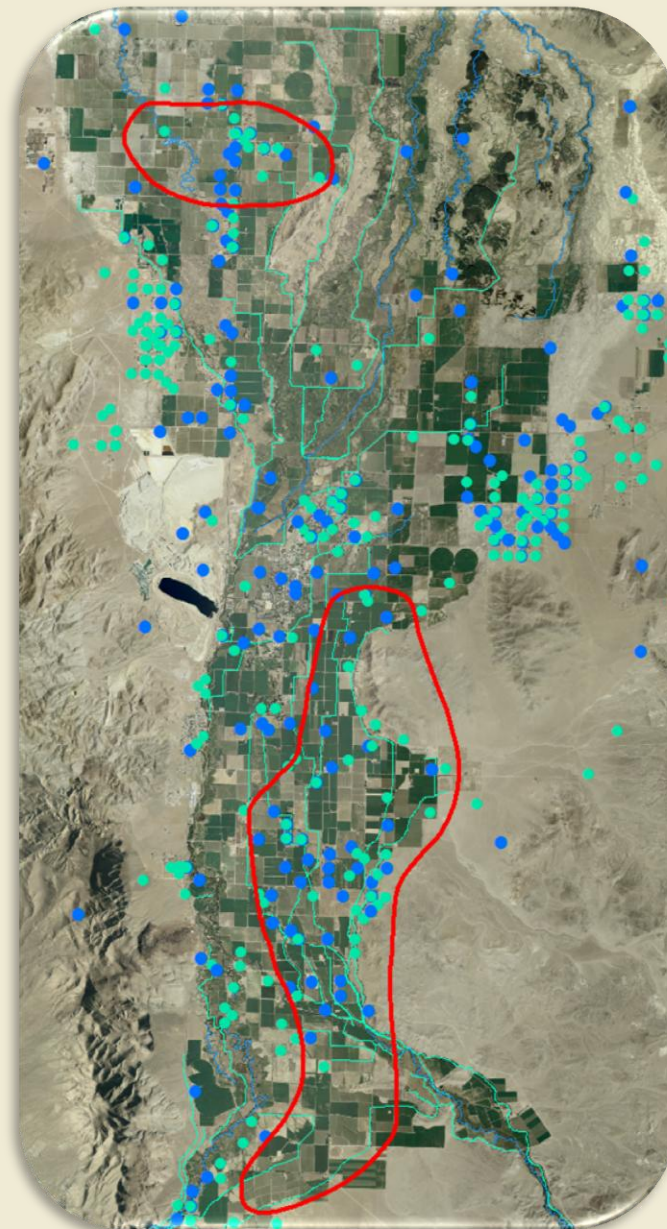


Walker River Basin

Smith Valley



Mason Valley

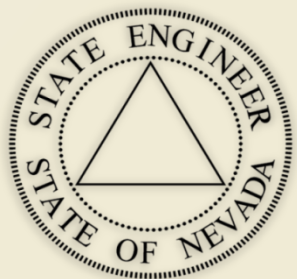


Domestic Wells

Domestic wells – only exempt use in our water Law

Domestic wells have a priority of the date that the well was completed. 534.080(4)

*“... where it appears that the average annual replenishment to the groundwater supply may not be adequate for the needs of all permittees ...the State Engineer may order that withdrawals, including, **without limitation, withdrawals from domestic wells**, be restricted to conform to priority rights.” 534.110(6)*

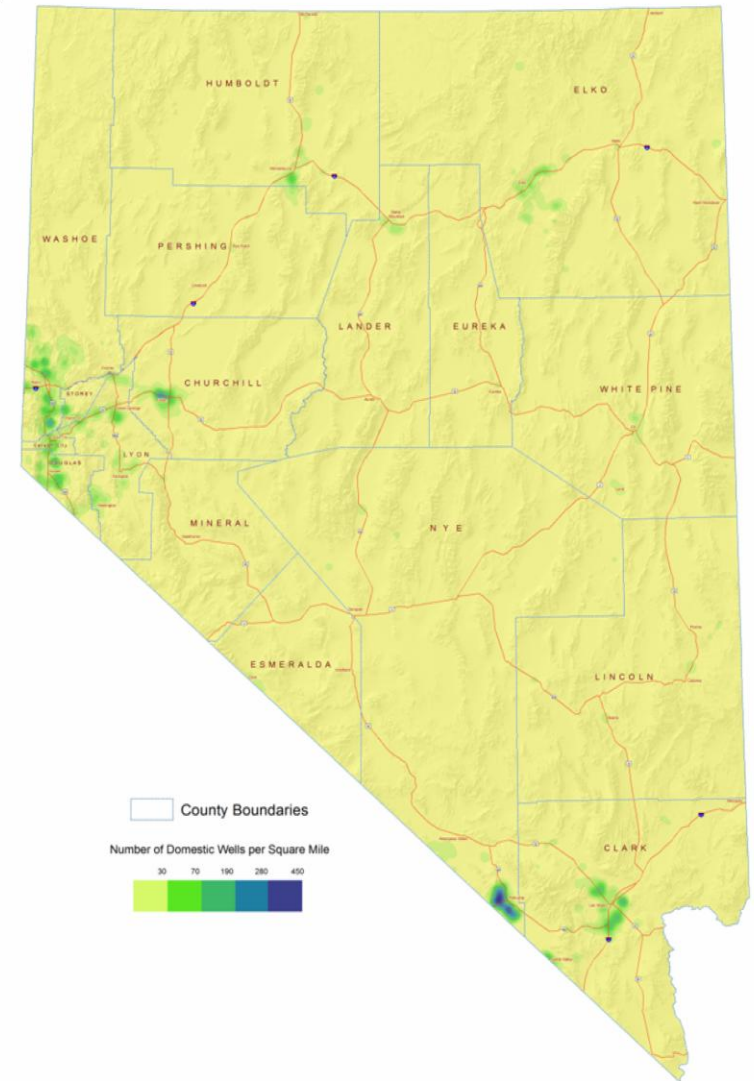
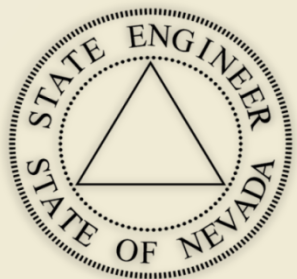


Domestic Wells

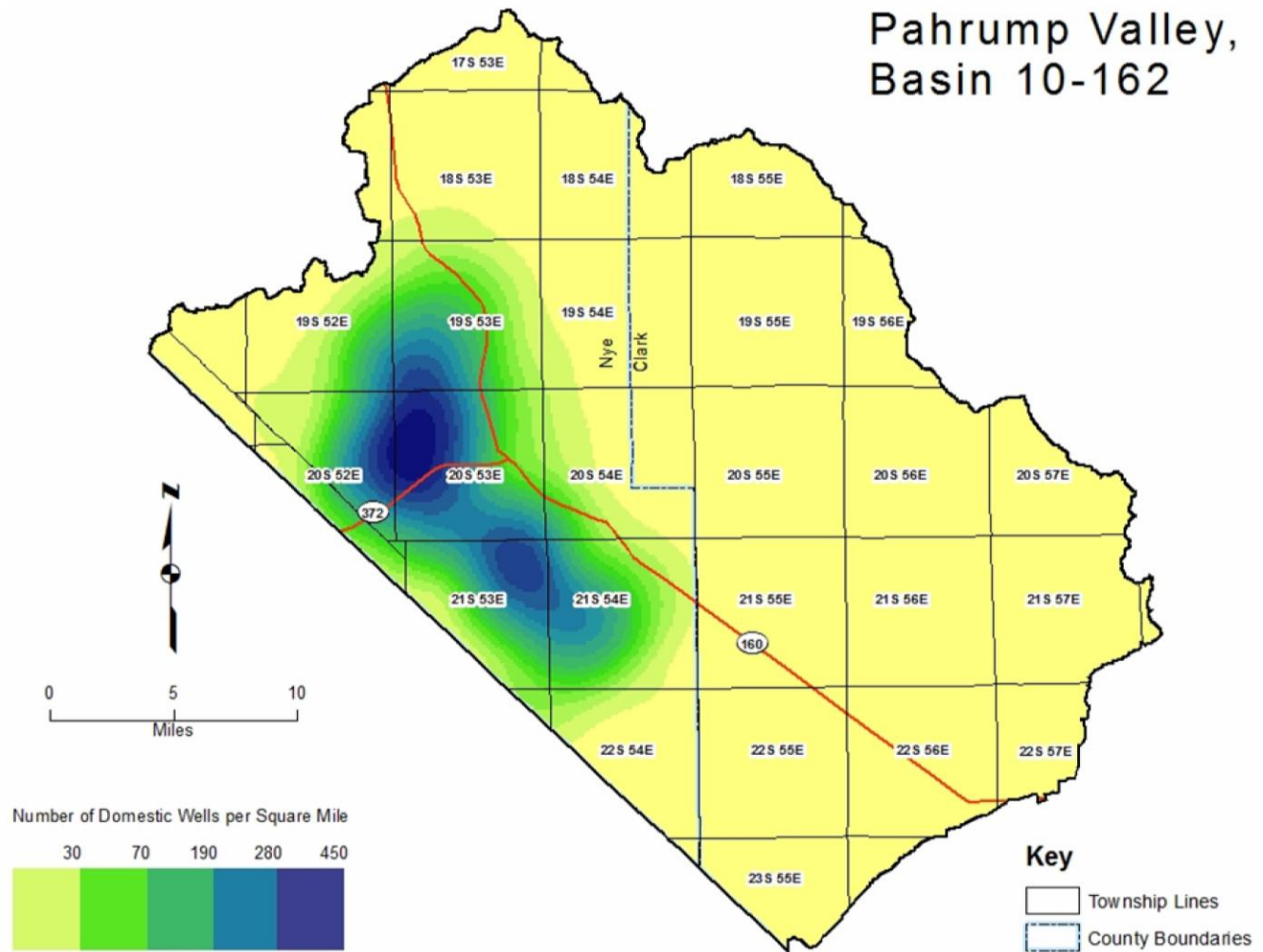
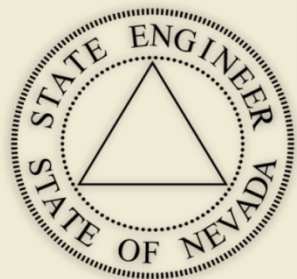
Total 50,342

Top 5 By Basin:

1.	Pahrump	11,155	22%
2.	Las Vegas	5,682	11%
3.	Carson Desert	4,086	8%
4.	Carson Valley	3,759	7.5%
5.	Truckee Meadows	1,753	3.5%



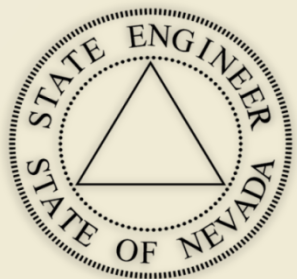
Domestic Wells in Pahrump



Adaptive Management

Effects from large scale groundwater pumping projects, or groundwater pumping near environmentally sensitive areas, cannot be predicted with **absolute** certainty.

Water right applicants and the State Engineer should be able to use Adaptive Management techniques, i.e. monitoring, management and mitigation, in order to best manage the state's water resources.

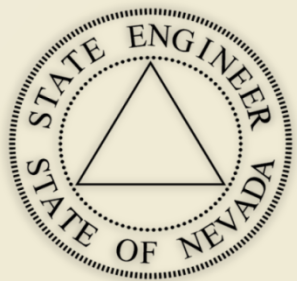


Adaptive Management

Mitigating Conflicts

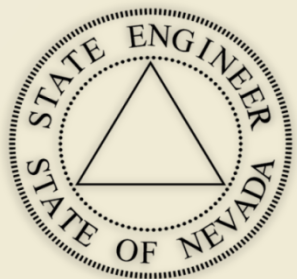
Legislative Policy – should a large project be denied because a small spring or a couple of domestic wells could be dried up (conflict), when those uses could be mitigated through other means?

- Water haul
- Deepened well
- Money

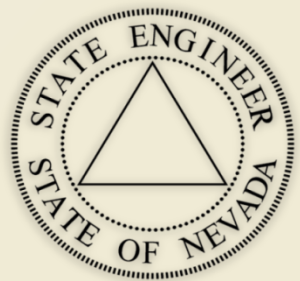


Use It or Lose It

- Where is the incentive to become more efficient?
- A water user stands to lose a portion of their water right after they've spent additional capital to become more efficient.
- Conservation credits?

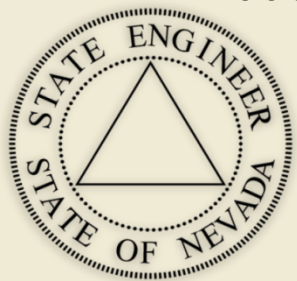


*We are about to
embark on a
treacherous
journey!*



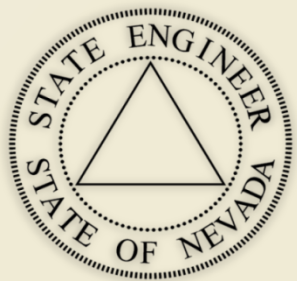
A Word of Caution

- Bill Draft Requests dealing with water are highly contentious.
- Successful passage of these bills require meticulous and well thought out bill drafts to avoid unintended consequences.
- Although constituent support is desired, sometimes tough choices must be made regardless.
- Misinformation runs rampant



Why do anything?

- If the legislature doesn't take on these important issues, the courts will!



Thank You!
Questions?

