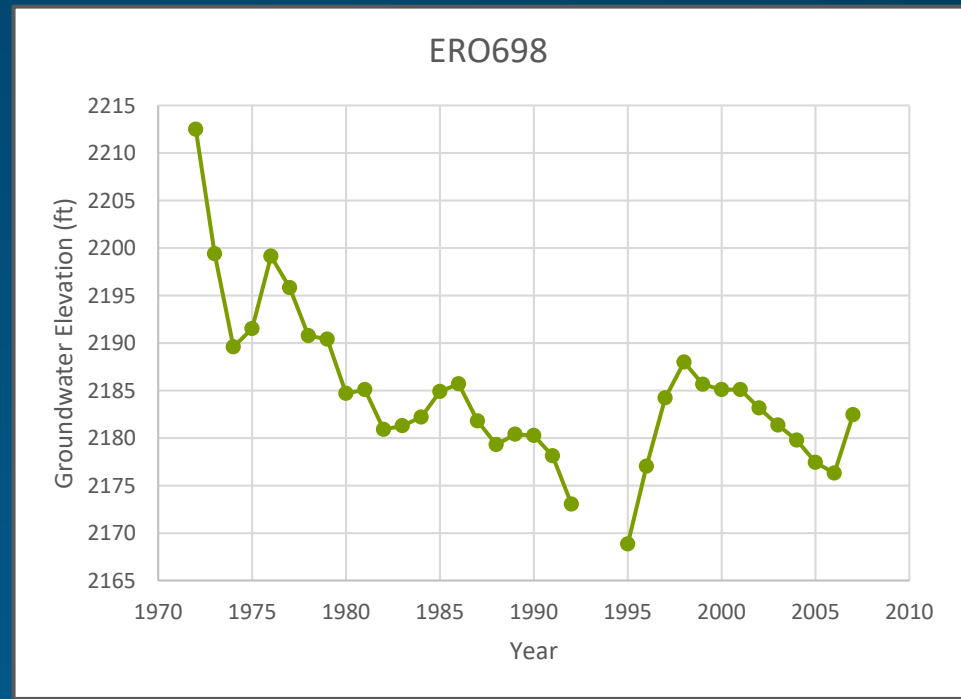


Groundwater Level Declines

Not Just an Odessa Groundwater Management Area Challenge



Presented by Kevin Lindsey, Alicia Candelaria, Elsa Bowen

PNWS-AWWA Annual Conference,
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Acknowledgements

- LCCD staff; data collection and well owner outreach
- Ecology staff; thoughtful comments
- OCR; funding
- Lincoln County Commissioners and citizens; looking for answers

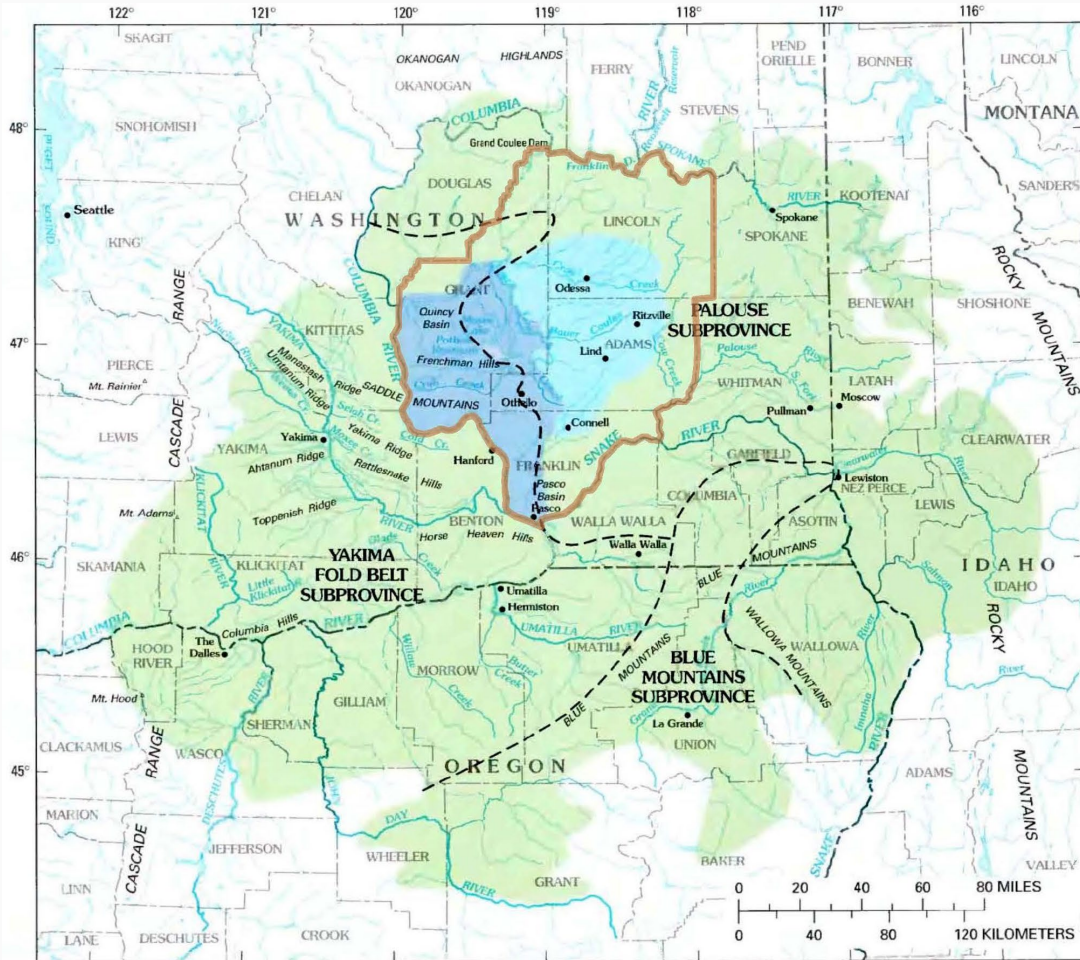


Introduction

- Purpose: Describe Groundwater Level Declines Outside the Odessa Subarea
- Odessa: define in a moment
- Why: If Spokane grows to West...
- Outline:
 - Project area
 - Historical studies/context
 - Recent observations
 - The future



Project Location



Base modified from U.S. Geological Survey digital data, 1:2,000,000, 1972

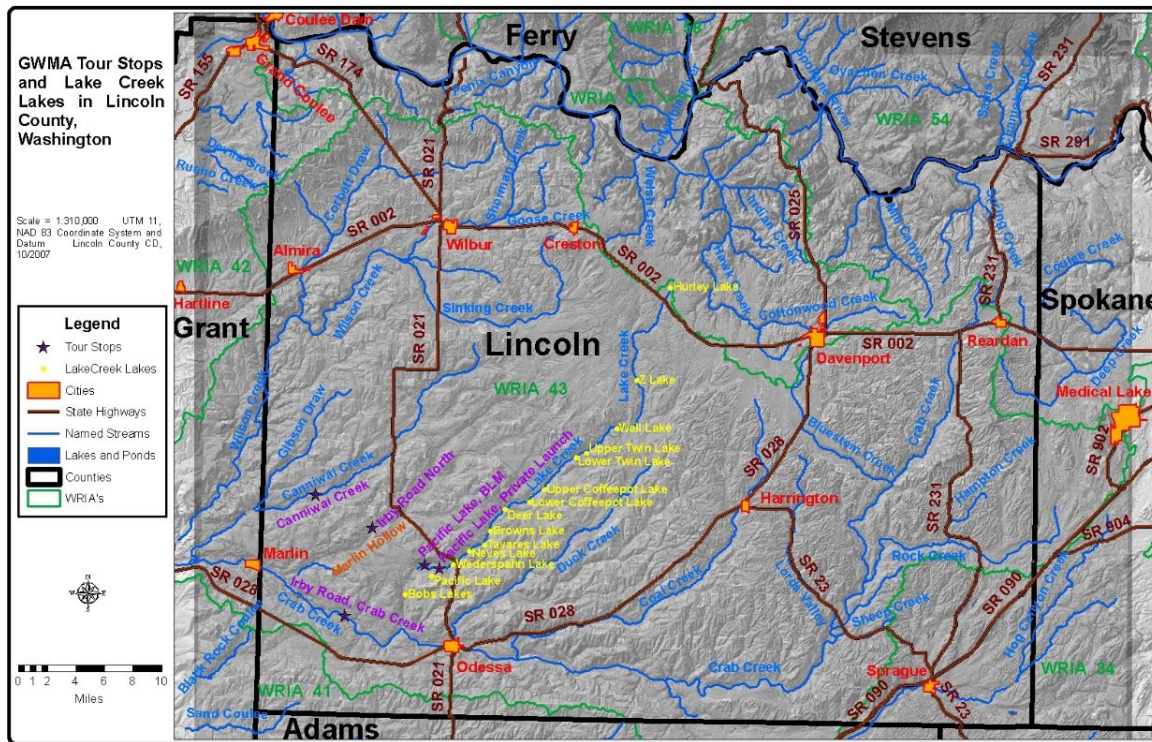
EXPLANATION

- Columbia Basin Irrigation Project
- Odessa-Lind pumping center
- Columbia Plateau aquifer system study area
- Boundary of physiographic subprovince
- Boundary of Columbia Basin Ground Water Management Area (GWMA)



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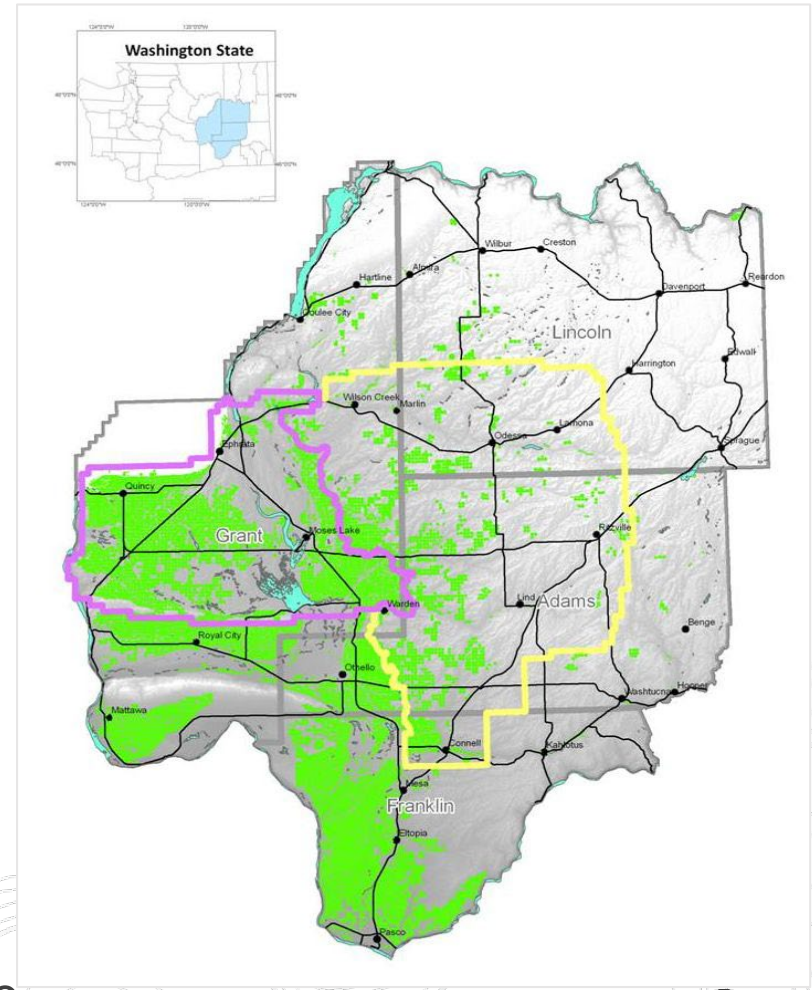
- Approx. 11,000 residents; 8 incorp. communities
- Av annual precip, 12-inches (SW) to 20-inches (NE), winter-spring
- Ag dominates economy
- Spokane to east (pop. 220,000 city/515,000 cty)
- Growth and water supply are the concern



Historical Context/Studies (1900-1980's)

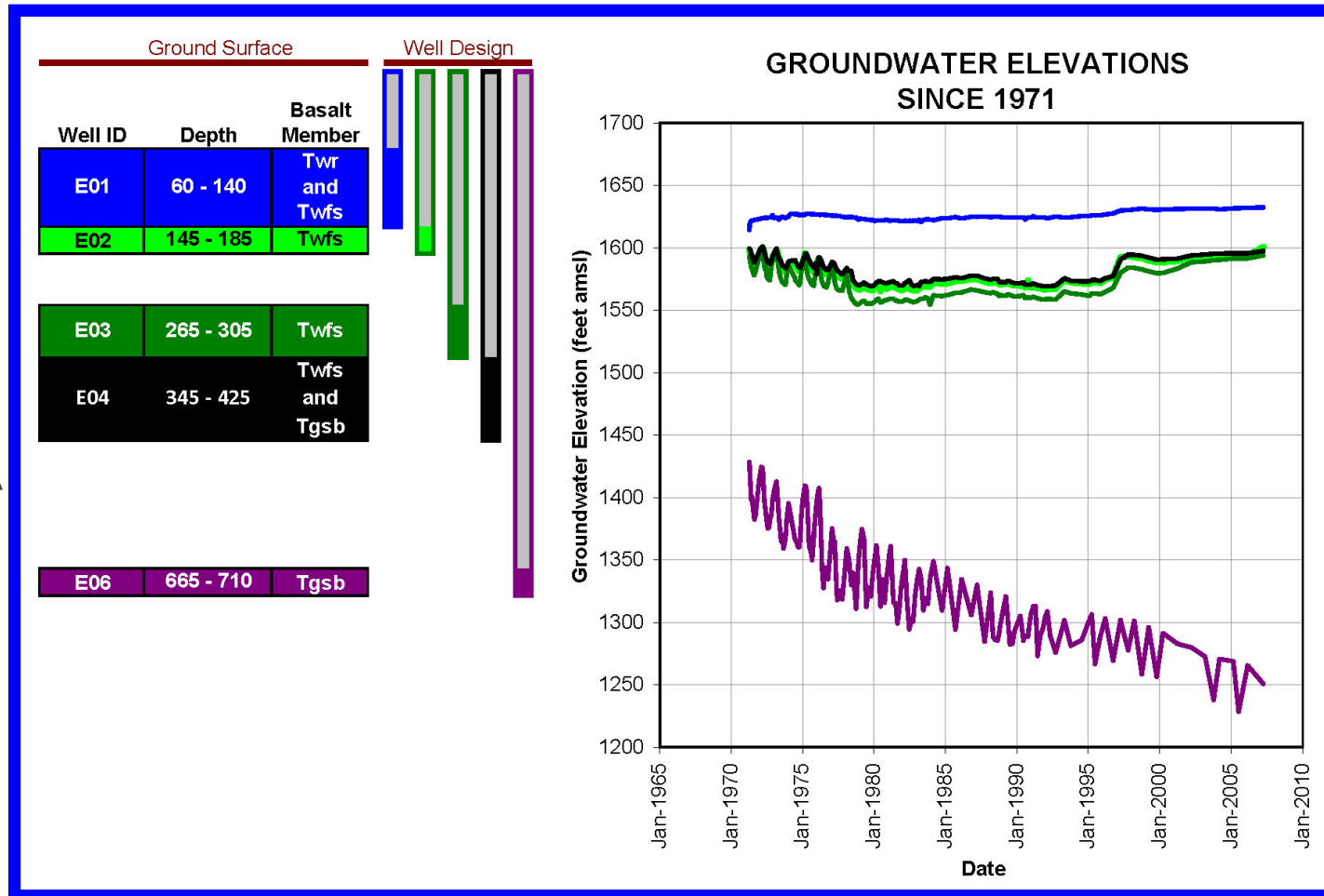


- Water recognized as critical
- Crab Creek Reservoir/WRIA; storage ideas...
- Odessa Area (1982); Deep aquifer pumping – surface water delivery in future



Historical Context/Studies (1970-2000's)

- USGS and Ecology Reports and data
- Columbia Basin GWMA
- GW decline picture emerged



Historical Context/Studies (1980's-2000's)

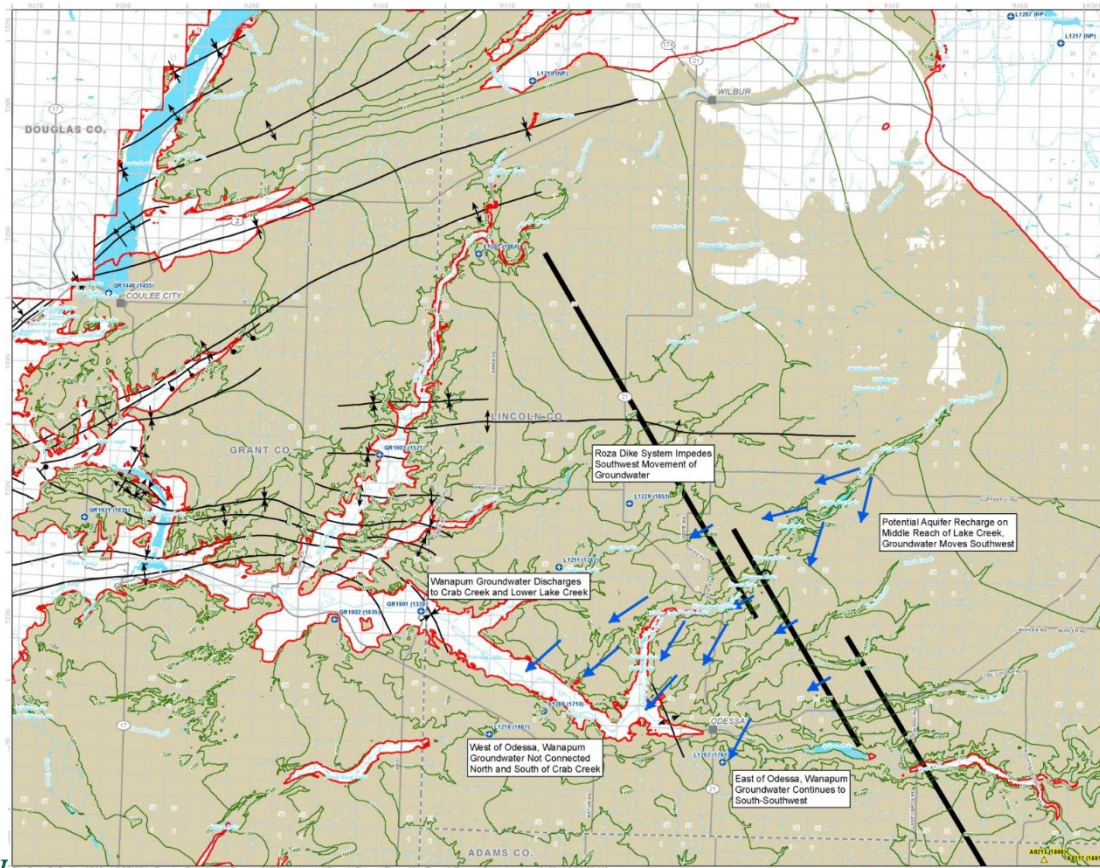


- Sinking Creek, Lake Creek
- Declines manifest in other ways; not sustainable
- Lincoln Rehydro (2013/2015); Starts trying to respond



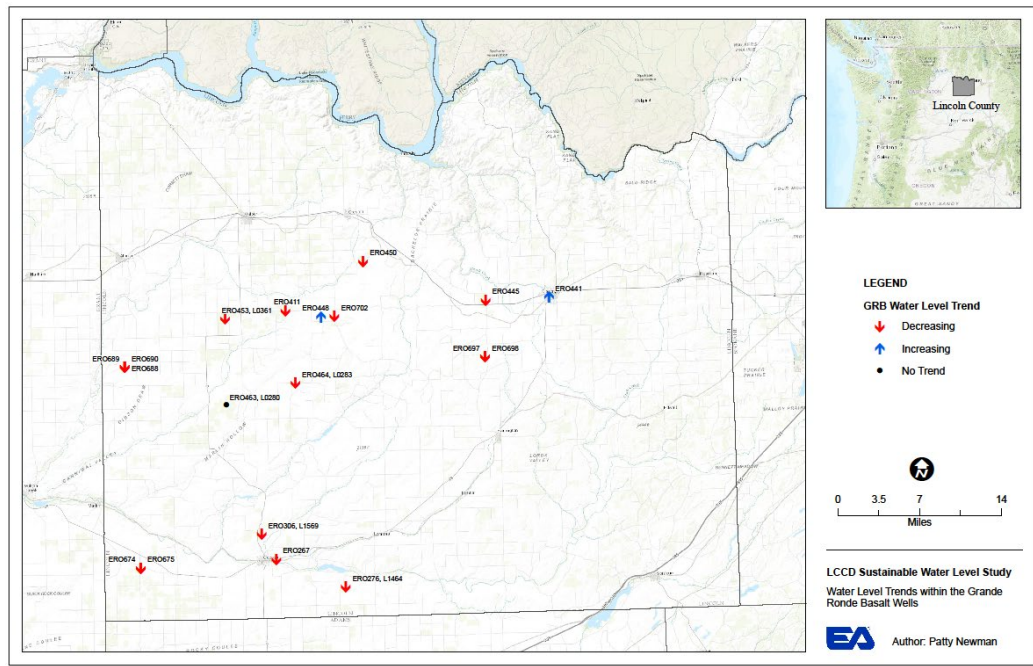
Historical Context/Studies (2014-2016)

- Lincoln Rehydro; import water from N
- Discontinued; cost
- Recent years, growth slowly building in NE



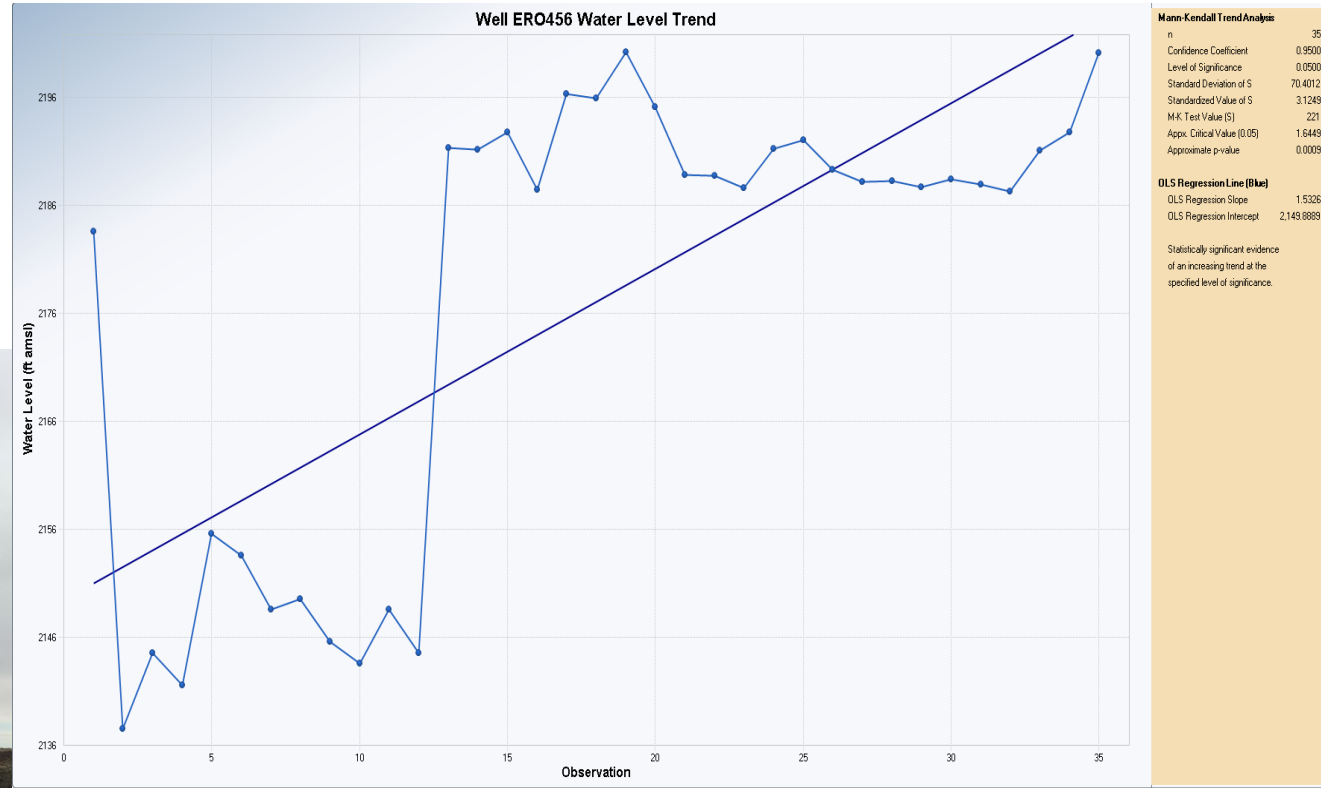
Recent Efforts (2016-2017)

- Build baseline
- First round (deep wells)
 - Dropping
 - Mining
- Reversible or manageable?



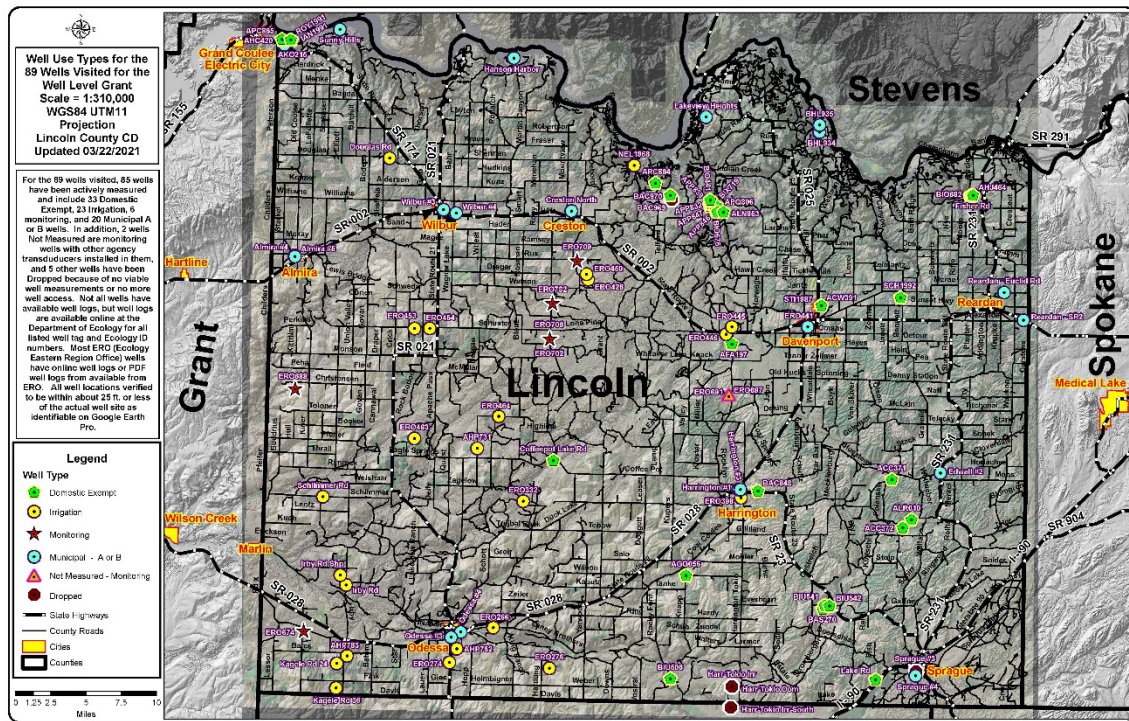
Recent Efforts (2016-2017)

- first round (shallow wells)
 - Variable
 - Susceptible to climate
- Is that an opportunity in wet years?

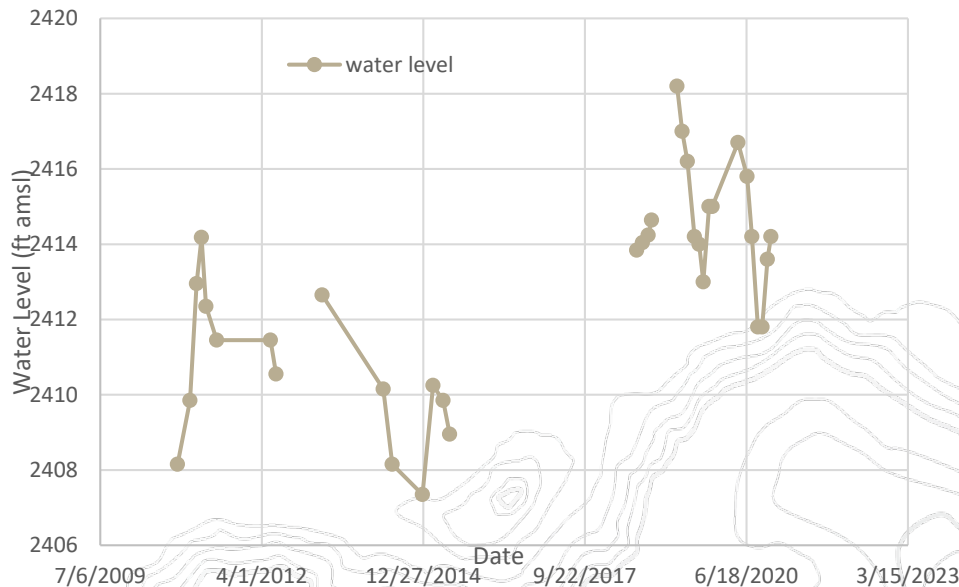


More Recent (2020-today)

- NE County
- 4 towns, small systems, rural wells
- Seasonally variable
 - More declines

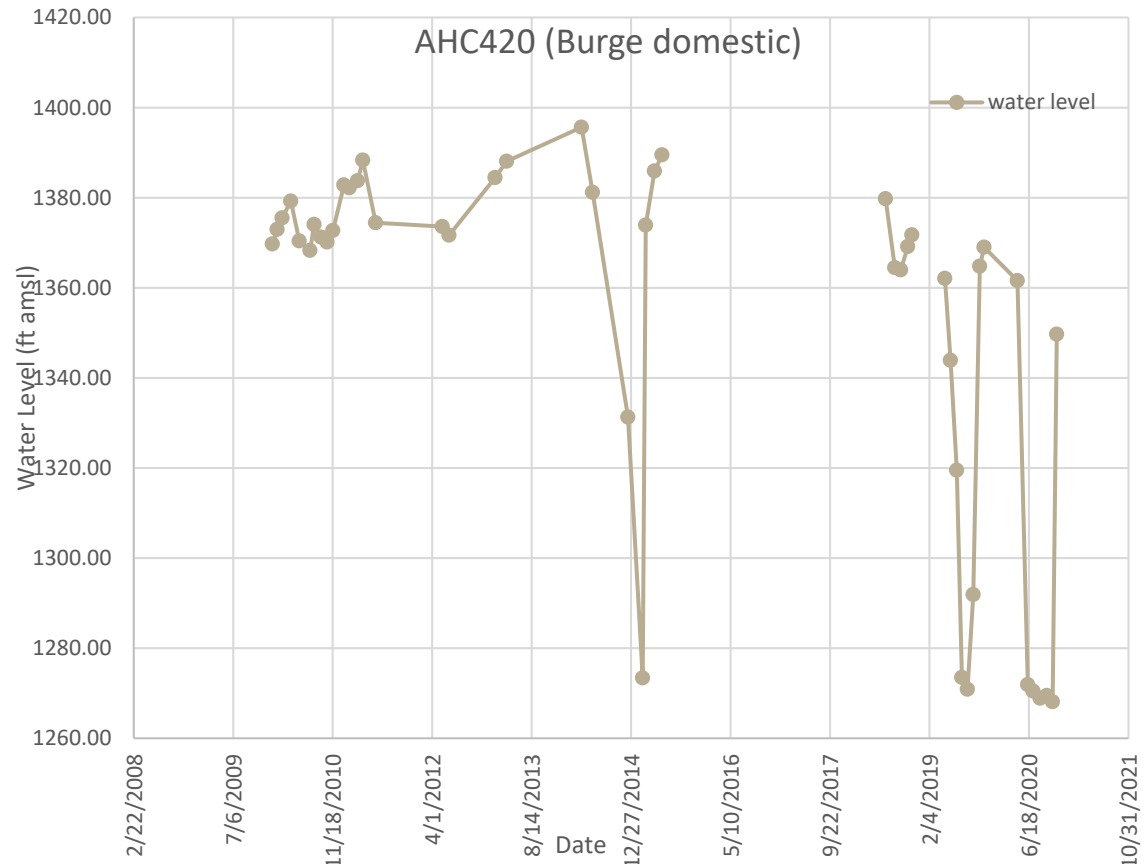


ACW391 (Regan domestic)



More Recent (2020-today)

- Without aquifer recovery
- If Spokane grows to West
- Town, small system, rural response?

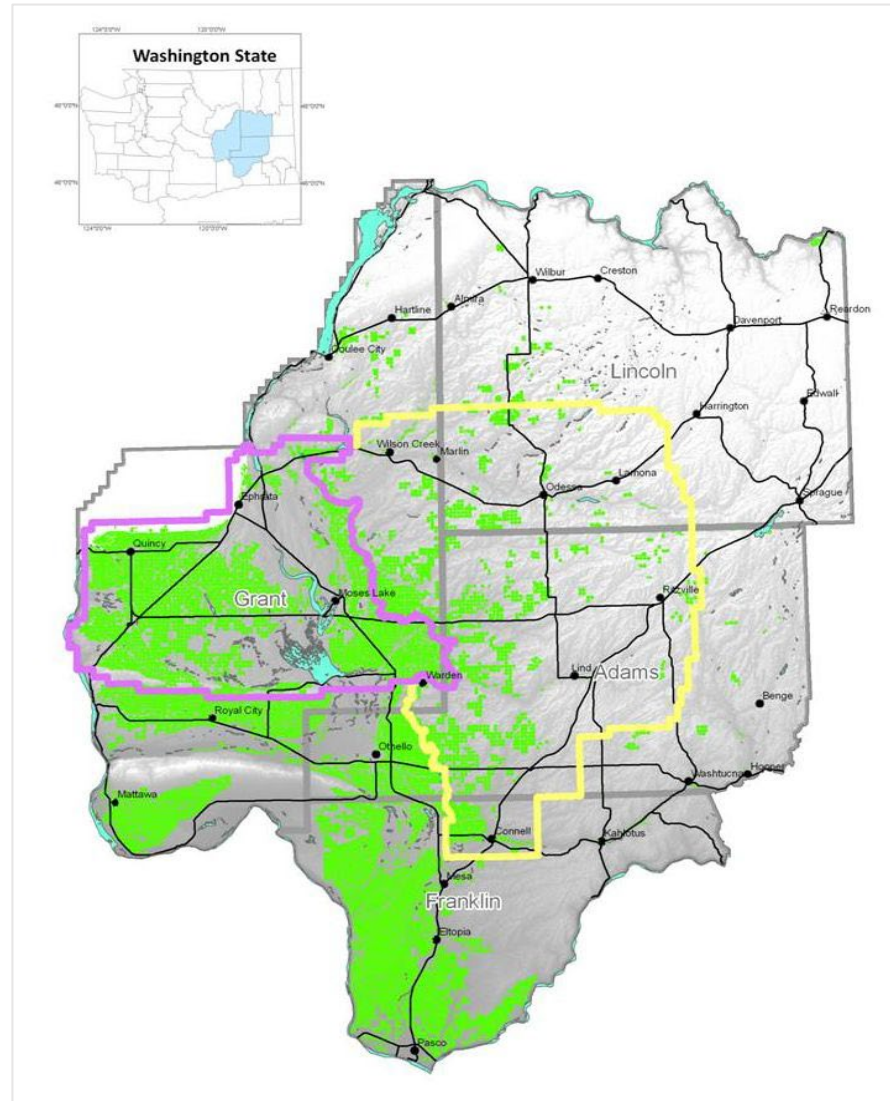


Depth category	# wells	# wells rising	# wells declining	% wells rising	% wells declining
78-200 feet deep	17	6	11	35	65
201-300 feet deep	15	7	8	47	53
301-500 feet deep	16	8	8	50	50
501-1000 feet deep	14	3	11	21	79
>1000 feet deep	5	0	5	0	100



The Future, Lincoln County

- In Odessa:
 - OGWRP
 - Upgradient changes?
- Outside Odessa:
 - Deep muni and ag wells:
 - usually trending down
 - mining is occurring
 - Shallower rural wells:
 - Dry yrs effect them;
 - Deepening to avoid climate fluctuation puts one in mined GW



The Future, Lincoln County

- LCCD continues to track
- Will the trends lead to:
 - Changing practices?
 - Alternative supply?
 - Land use planning?
 - Regional systems?
 - Increased cost?
- Opportunity?



Thank you for your time.

Questions?

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