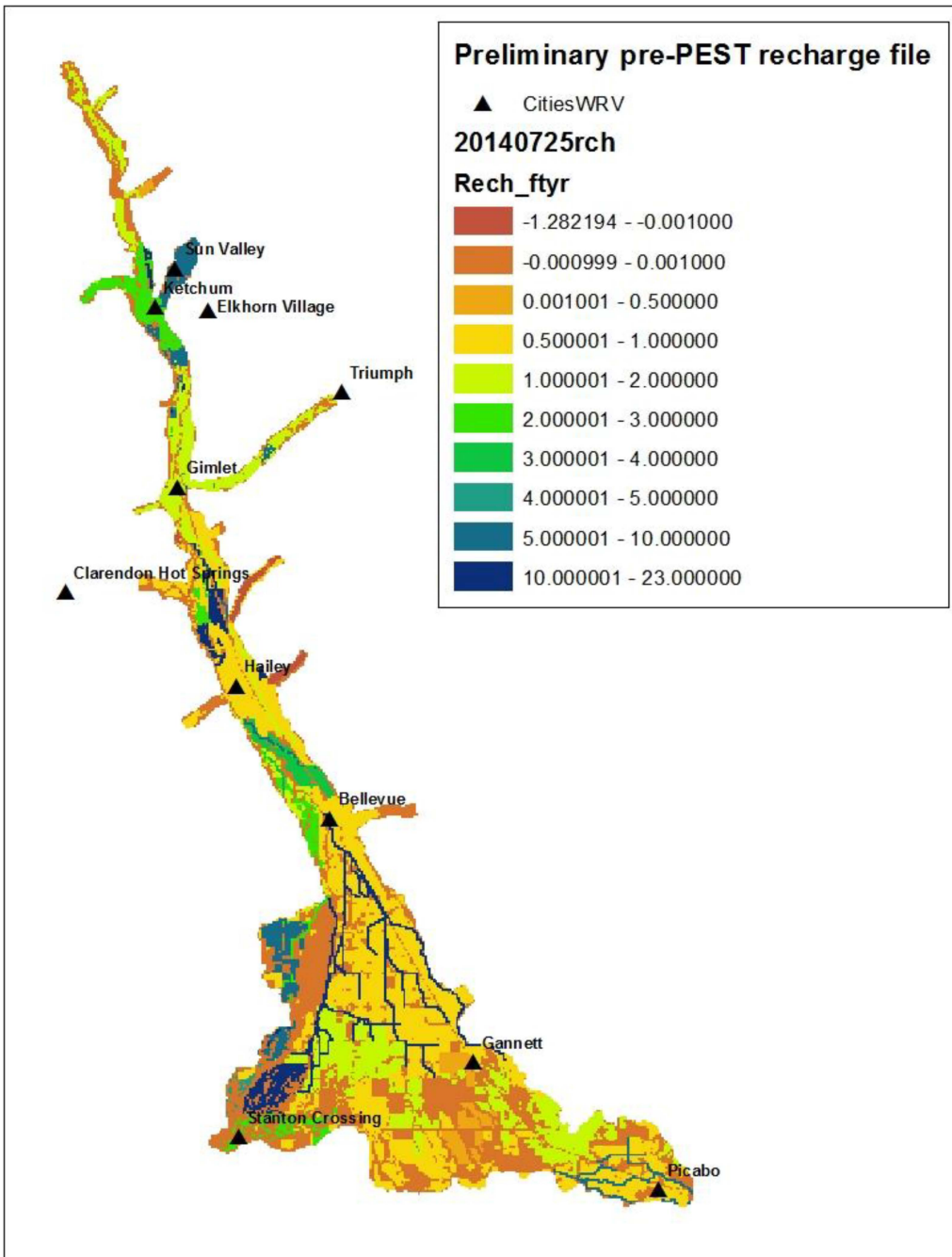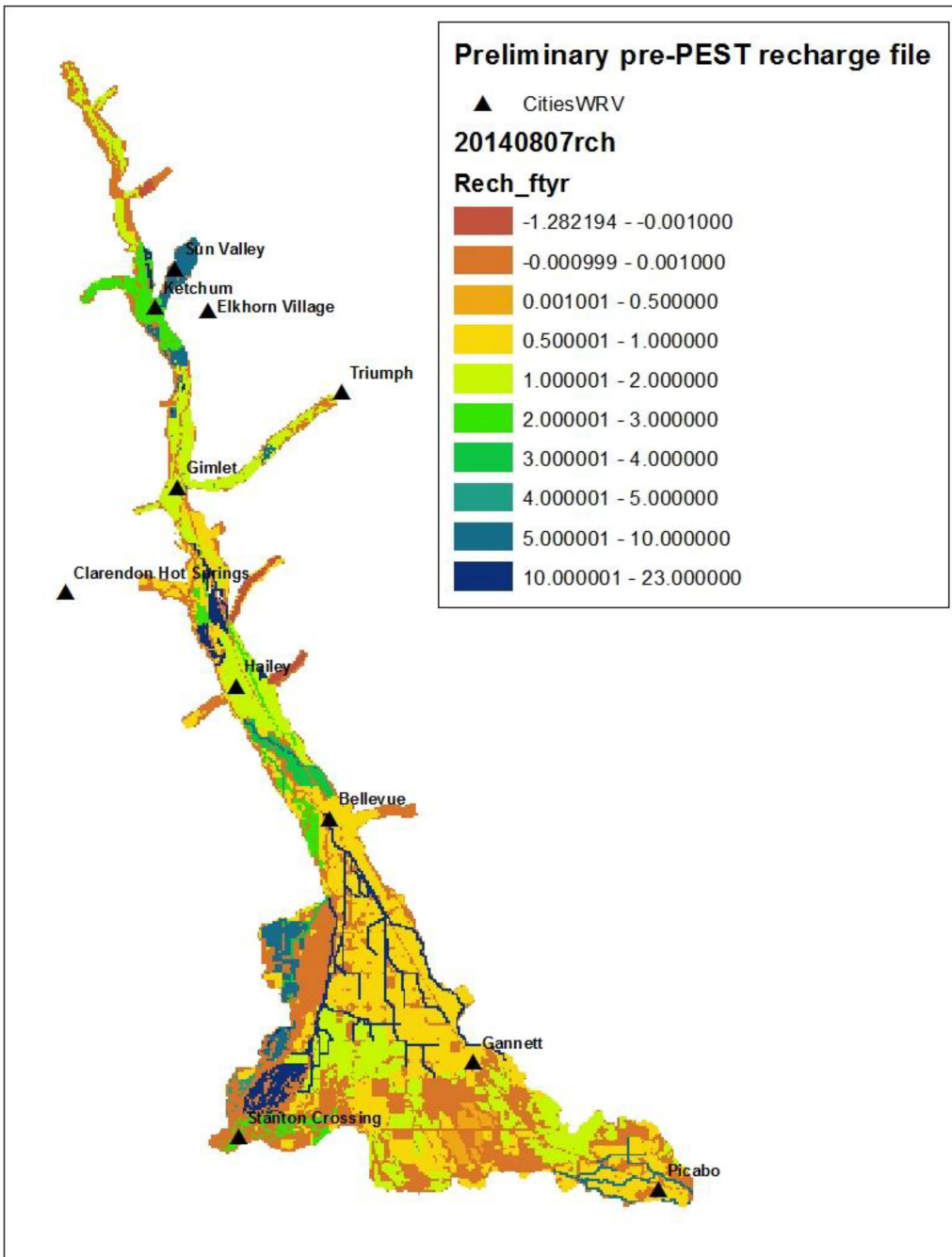IDAHO Department of Water Resources

Preliminary water budget for initial calibration runs, Wood River Valley Groundwater Model development

Presented by Jennifer Sukow, P.E., P.G.
August 12, 2014

IDWR

Preliminary pre-PEST recharge file

▲ CitiesWRV

20140725rch

Rech_ftyr

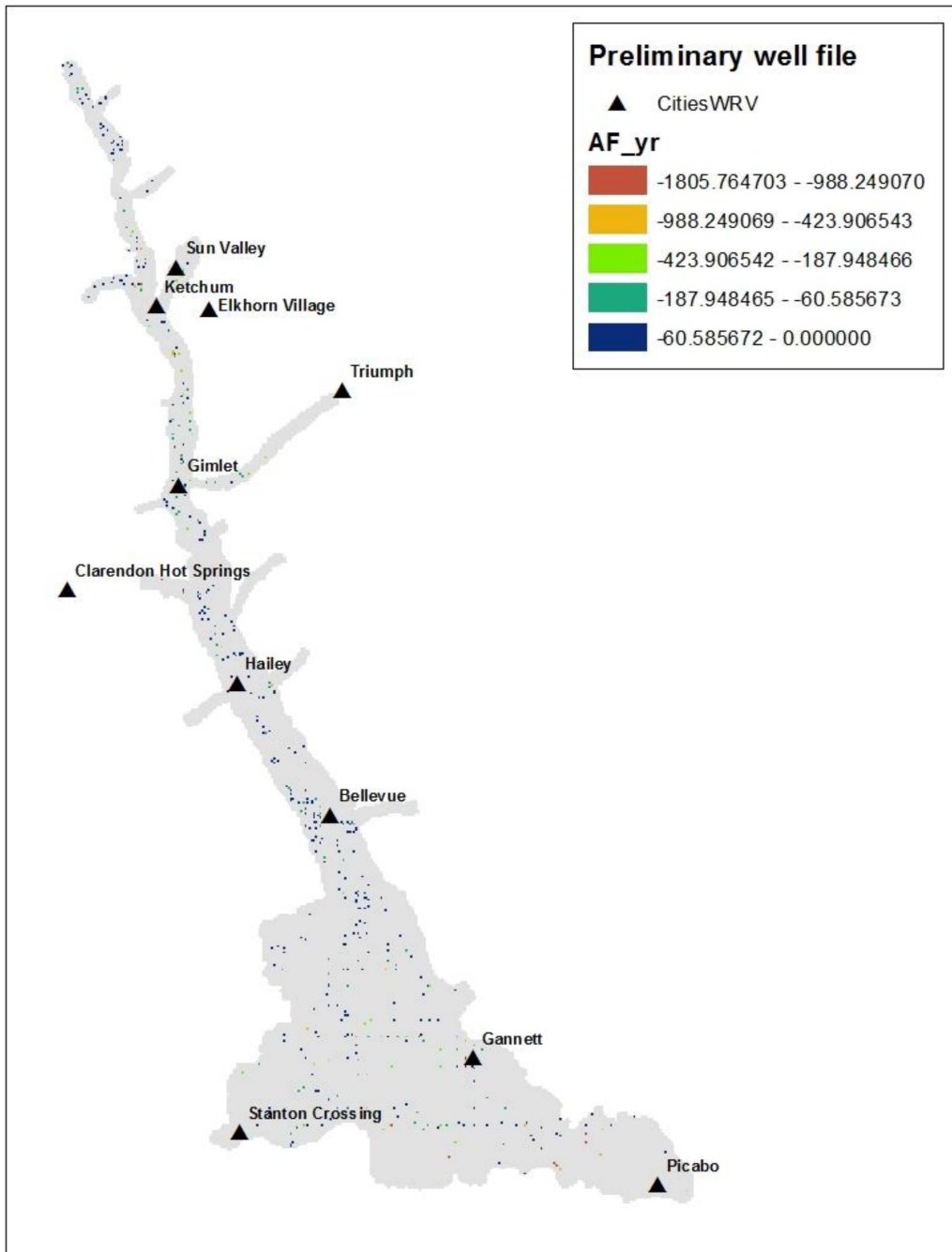| Color	Range
	-1.282194 - -0.001000
	-0.000999 - 0.001000
	0.001001 - 0.500000
	0.500001 - 1.000000
	1.000001 - 2.000000
	2.000001 - 3.000000
	3.000001 - 4.000000
	4.000001 - 5.000000
	5.000001 - 10.000000
	10.000001 - 23.000000

- RCH file includes canal seepage, incidental recharge, and recharge on non-irrigated lands

- Preliminary calculation of recharge = 111,000 AF/yr (7/25/2014)

- Further evaluation of recharge processing code & input data is ongoing, preliminary numbers will continue to be revised

Preliminary pre-PEST recharge file

▲ CitiesWRV

20140807rch

Rech_ftyr
- -1.282194 - -0.001000
- -0.000999 - 0.001000
- 0.001001 - 0.500000
- 0.500001 - 1.000000
- 1.000001 - 2.000000
- 2.000001 - 3.000000
- 3.000001 - 4.000000
- 4.000001 - 5.000000
- 5.000001 - 10.000000
- 10.000001 - 23.000000

- RCH file includes canal seepage, incidental recharge, and recharge on non-irrigated lands

- Preliminary calculation of recharge = 113,000 AF/yr (8/7/2014)

- Further evaluation of recharge processing code & input data is ongoing, preliminary numbers will continue to be revised

Preliminary well file

▲ CitiesWRV

AF_yr

	-1805.764703 - -988.249070
	-988.249069 - -423.906543
	-423.906542 - -187.948466
	-187.948465 - -60.585673
	-60.585672 - 0.000000

- WEL file includes recorded and estimated groundwater diversions

- Preliminary calculation of well pumping = -50,000 AF/yr
  (7/25/2014)

- Preliminary calculation of well pumping = -58,000 AF/yr
  (8/7/2014)

- Further evaluation of estimated pumping processing code & input data is ongoing, preliminary numbers will continue to be revised

Water budget for preliminary steady state calibration run

- Pre-PEST preliminary water budget
  - Tributary underflow = 17,000 AF/yr
  - Recharge = 111,000 AF/yr
  - Wells = -50,000 AF/yr
  - Net river leakage = -68,000 AF/yr
  - Underflow beneath Stanton Crossing & Silver Creek = -10,000 AF/yr

- Compare to target values
  - Net river leakage = -93,000 AF/yr
  - Bartolino and Adkins (USGS, 2012) estimated underflow beneath Stanton Crossing & Silver Creek = -4,300 AF/yr

Water budget for preliminary steady state calibration run

- Post-PEST preliminary water budget
  - Tributary underflow = 28,000 AF/yr
  - Recharge = 127,000 AF/yr
  - Wells = -50,000 AF/yr
  - Net river leakage = -78,000 AF/yr
  - Underflow beneath Stanton Crossing & Silver Creek = -27,000 AF/yr

- Compare to target values
  - Net river leakage = -93,000 AF/yr
  - Bartolino and Adkins (USGS, 2012) estimated underflow beneath Stanton Crossing & Silver Creek = -4,300 AF/yr (not a weighted target in this calibration run)