*(Agenda item 3b.iii)*

# Simulated Future Shallow Well Impact Analysis

*Methodology*

1. Simulated groundwater levels at the end of 2020, 2025, 2030, 2040, and 2070 for each 15.4-acre model cell.
2. GIS calculated avg annual DDN rate by Section for 4 time periods.
3. Shallow well impact based on
   a. Estimated drill date and well construction
   b. Simulated groundwater level change over time
4. Updated Analysis with 872 Shallow Wells
   - 377 DOM wells from Kern County Health Department Well Permits
   - 455 other private wells (randomized drill-date distribution)
   - 40 mutual and community service district wells

1

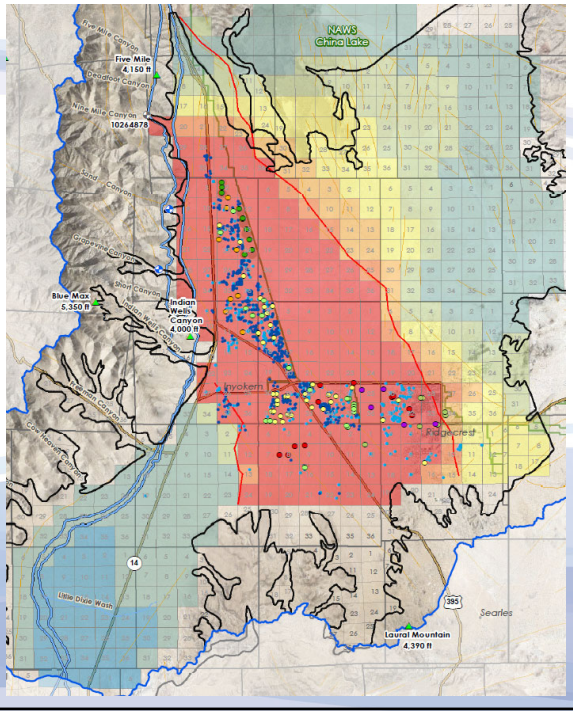
# Baseline 50-Year Predicted DDN

Simulated Predicted Groundwater Level Change 2020 to 2070

- No DDN
- 0 to -10 feet
- -10 to -20 feet
- -20 to -30 feet
- -30 to -40 feet
- -40 to -50 feet
- More than -50 feet

40 Mutual and CSD
832 Domestic/Private
872 Shallow Wells

66 Larger Production
938 Total Production Wells



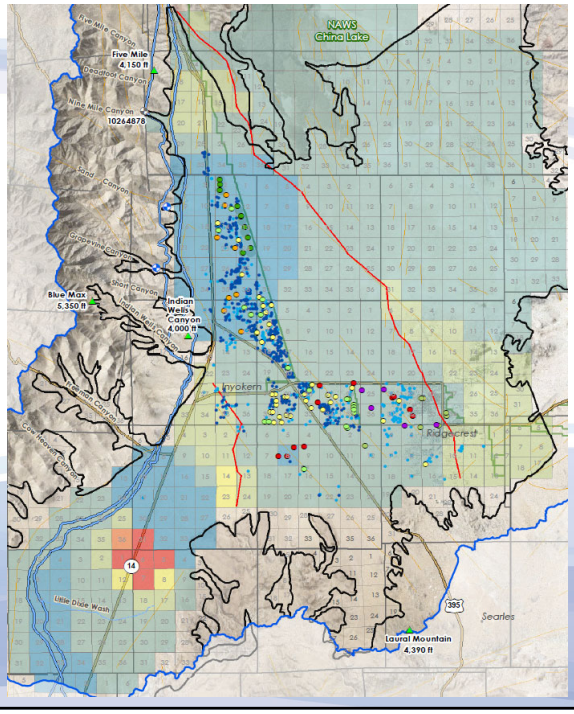

2

# Scenario #1
# 50-Year Predicted DDN

Pumping Ramp Down for 20 years
Imported Water Recharge & Recovery
Recycled Water Use
Management Concepts:
Cliff Pumping
Leasing

Simulated Predicted
Groundwater Level Change
2020 to 2070

- No DDN
- 0 to -10 feet
- -10 to -20 feet
- -20 to -30 feet
- -30 to -40 feet
- -40 to -50 feet
- More than -50 feet

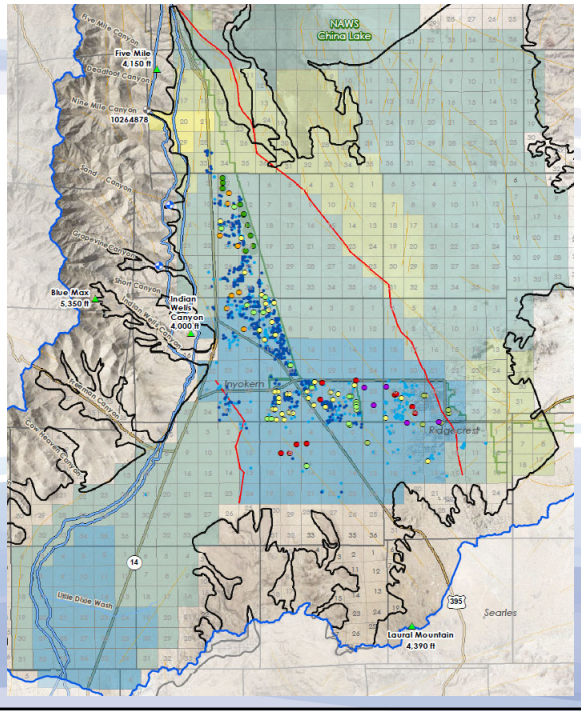



# Scenario #2
# 50-Year Predicted DDN

Reduced Pumping
by 38% in 2025 to 21,680 AFY
by 54% in 2030 to 13,650 AFY
Recycled Water Use
Imported Water Recharged in 2030
Direct Use of Imported Water in 2030

Simulated Predicted
Groundwater Level Change
2020 to 2070

- No DDN
- 0 to -10 feet
- -10 to -20 feet
- -20 to -30 feet
- -30 to -40 feet
- -40 to -50 feet
- More than -50 feet



# Next Steps

- Complete estimated impacts by Model Run
- Review method/results with Model Ad Hoc