

# Updates on Addressing Butte Valley GSP Deficiencies

---



## **Deficiency A.1. Reevaluate the assessment of overdraft conditions in the Basin**

---

# 1. Updated Overdraft Assessment

- Table with revised change in storage based on change in groundwater elevations, specific yield, and Thiessen polygon interpolation
  - Revision replaces reported annual groundwater storage changes, now based on measured water level changes instead of modeled storage changes

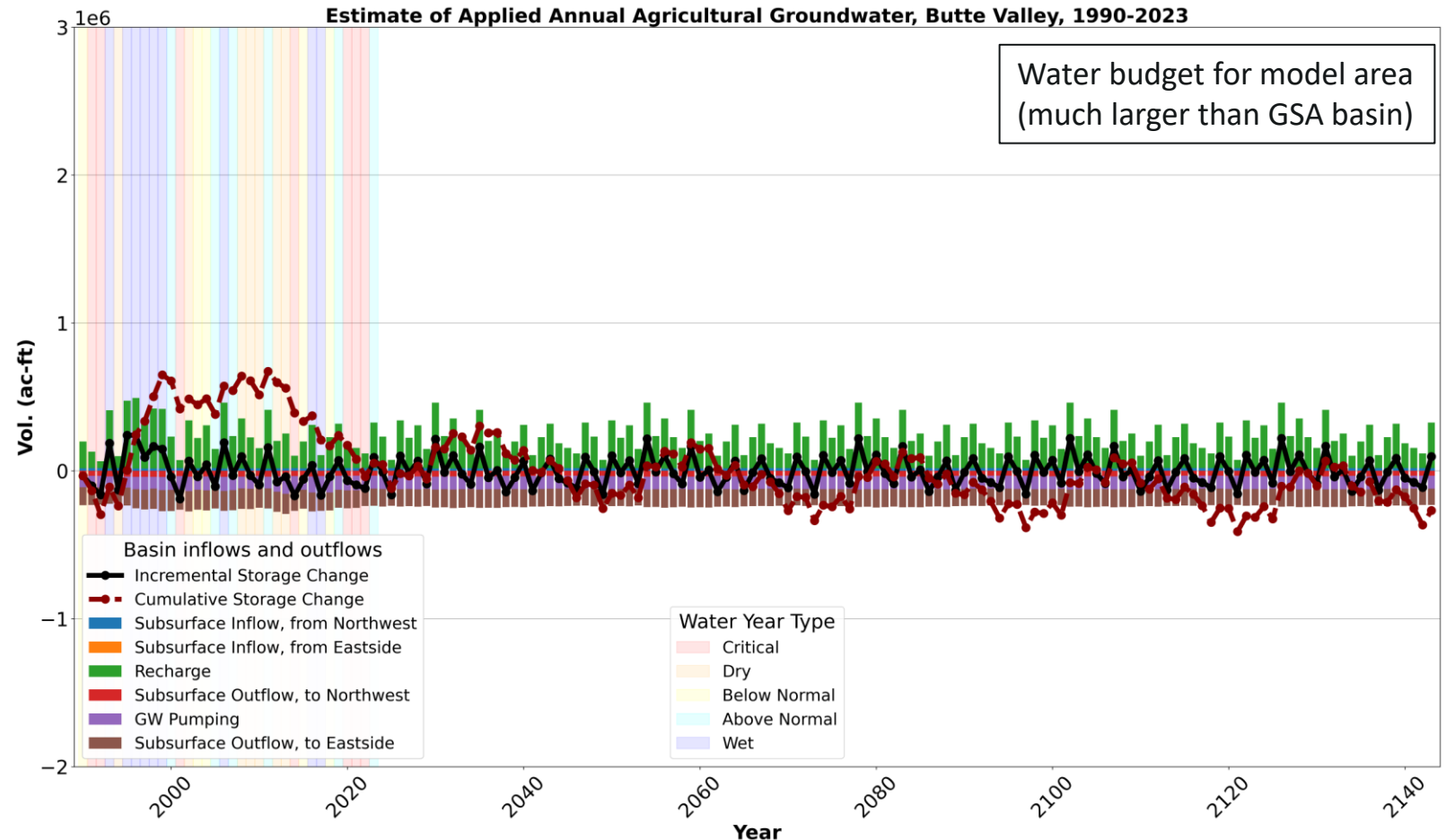
RANGE	NUMBER OF YEARS	NUMBER OF WELLS	GW STORAGE CHANGE PER YEAR (AC-FT)
1990-2024	34	at least 12	-4,198
1990-2000	10	27	799
1990-2010	20	at least 12	-2,685
1990-2014	24	20	-4,143
2000-2014	14	21	-7,390
2010-2024	14	15	-6,359
2014-2024	10	at least 12	-4,725
2017-2024	7	12	-5,374
2000-2024	24	17	-6,280

**Deficiency A.2. Provide a reasonable means to mitigate the overdraft that is continuing to occur in the Basin.**

---

# Revised Sustainable Yield

- 2000-2023 megadrought climate, repeated through mid-21<sup>st</sup> century
- 2023 pumping fixed all years thereafter (65,000 acft, which is the average for 1990-2014)



# Estimated Groundwater Pumping

Time Period	TAF/ Year	Estimated Groundwater Storage Change (TAF/year)
Average 1990-2023	67	-4.2
Average 1990-2000	61	+0.8
Average 1990-2010	63	-2.7
Average 1990-2014	65	-4.1
Average 2000-2014	68	-7.4
Average 2010-2023	73	-6.4
Average 2014-2023	74	-4.7
Average 2017-2023	76	-5.4
Average 2000-2024	70	-6.3

# Overdraft Mitigation

---

- Reduction in Basin's sustainable yield to 65,000 AF
  - Average of the baseline period between 1990 and 2014, consistent with numbers reported in the 1970s
- Requires a 10-15% reduction in groundwater extraction, achieved through:
  - Irrigation efficiency improvements
  - Better assessment of crop needs
  - Water allocation program (if required)
- Monitoring of the reduction through:
  - Flowmeters on representative fields
  - ET stations
  - Soil moisture sensors
- Groundwater Allocation Framework
  - Added as a PMA
    - Outline monitoring and data collection framework
    - Set timeline to be developed by the end of 2025

**Deficiency B.1. The GSP should describe the specific, quantitative undesirable results they aim to avoid through implementing the Plan**

---



# Quantitative Undesirable Result

---

- Qualitative Undesirable Result
  - Impacts to environmental uses and users
  - Reductions in pumping capacity
  - Dry domestic wells
    - GSA is committed to mitigating up to 20% of dry domestic wells, as needed (see Well Mitigation Program) → mitigatable outcome
    - 20% of domestic wells estimated to be 40-50 wells (see Well Failure Analysis)
- Quantitative Undesirable Result defined as more than 25% (more than 3 of 13) representative monitoring sites falling below the minimum thresholds over two consecutive years
  - Set to avoid undesirable results

---

## **B.1.1 Negative Effects to Beneficial Uses and Users at undesirable result conditions**

## **B.1.2 Rationale for determining number of wells that may be dewatered and impacts to GDEs without undesirable results occurring**

- Well failure analysis
- Updated GDE assessment and data collection (already ongoing)

## **B.1.3 Well mitigation program as a project and management action**

- Revised “well replacement” PMA (Tier II) is now “well mitigation” PMA (Tier I)
- Program development by December 2025
- GSA is committed to funding mitigation for up to 20% of domestic well, if needed
  - In 2024 GSA is actively mitigating 4 domestic wells
- Long-term, sustainable funding options will be part of the Fee Study or other available grants
- GSA will investigate additional funding sources and will work with Office of Emergency Services (OES)

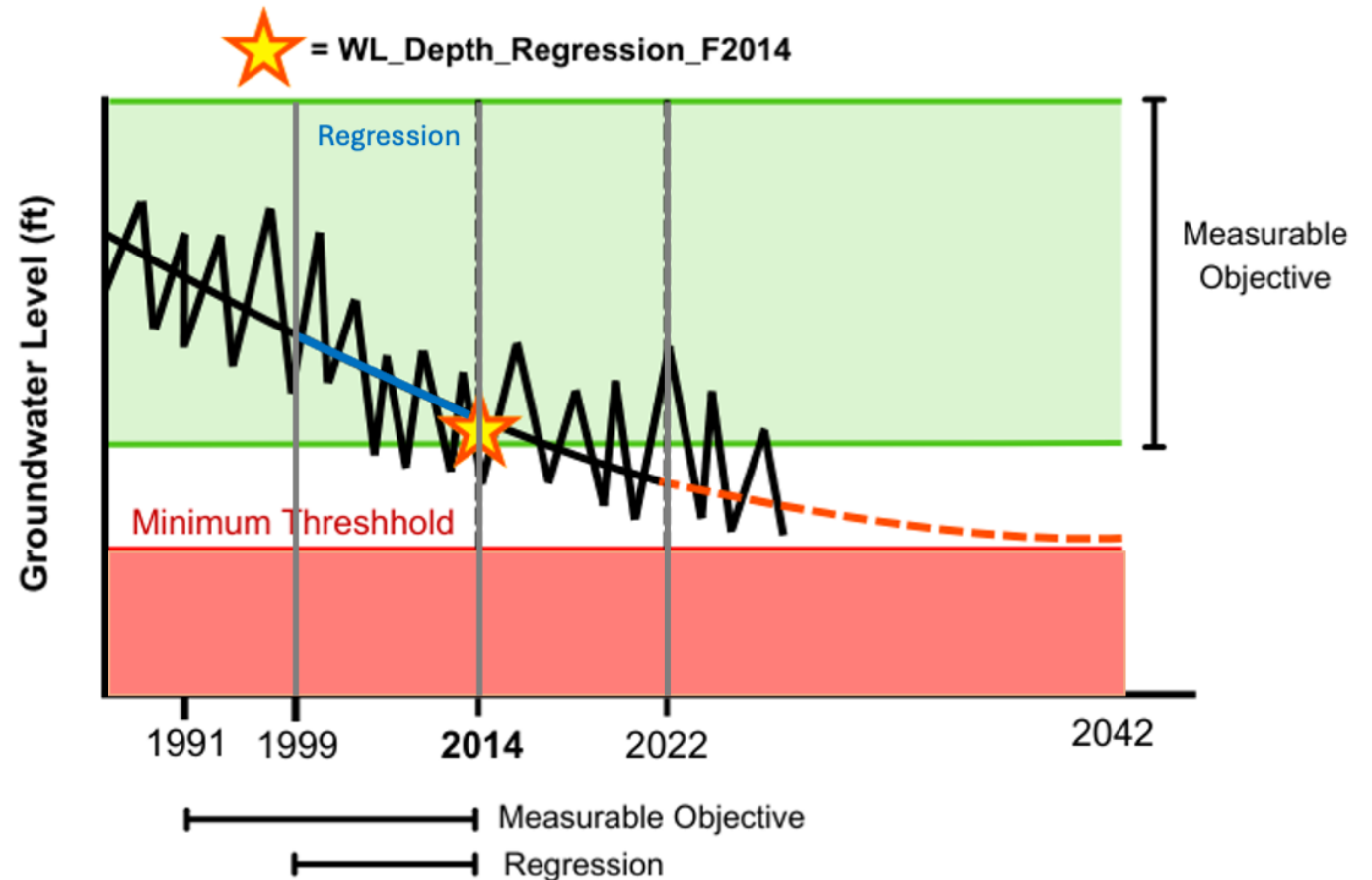
## B2. Revise minimum thresholds

---

- To be set at the level where depletion of supply may lead to undesirable results
- Criteria to establish and justify MTs
- Consider how MTs may affect interests of beneficial uses and users
- Fully document analysis and justifications performed to establish criteria used to establish MTs

# Revised Minimum Thresholds

- Minimum thresholds defined so that decline is no more than 75% of an unmitigated decline and to provide operational flexibility
- Designed to avoid undesirable outcomes:
  - At MTs, 28 wells in the Basin are at risk of well outage that were not already dry in 2015 (~12% of wells)
  - 12% well outages at the MT is well below the 20% of well outages considered to be mitigatable



## **B.3.1. Provide evaluation of how MTs may affect interest of beneficial uses and users**

- See revised well failure analysis
- See updated GDE assessment and data collection

## **B.3.2. Identify number and location of wells that may be negatively affected when MTs are reached**

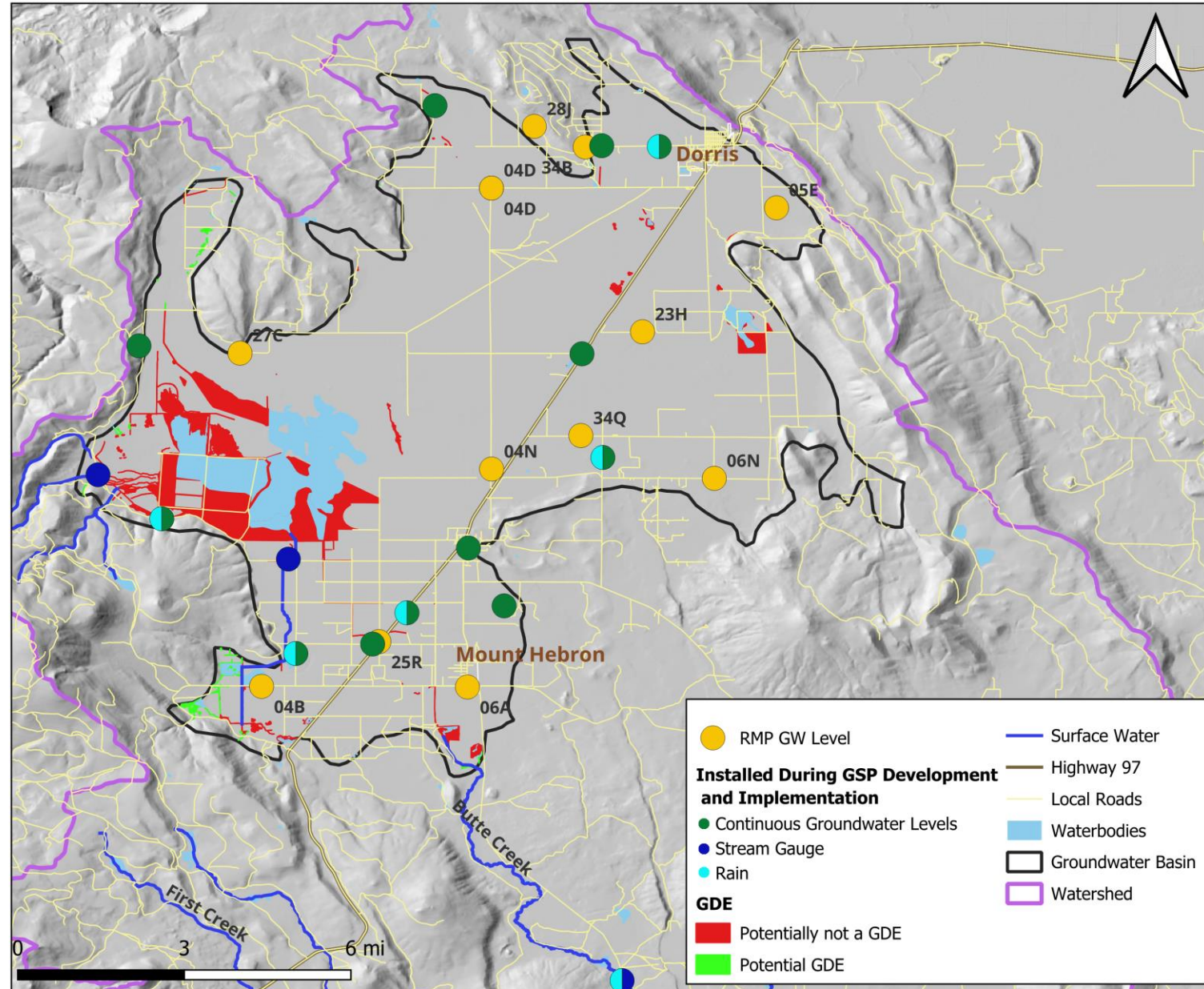
- Revision of Well Failure Analysis (preliminary results; methods and detailed final results to be provided in Revised GSP)
  - Total number of domestic wells in OSWCR: 247
  - Estimated domestic wells already dry in 2015: 46
  - Estimated additional domestic well outages 2015-2023: 14
  - Estimated additional domestic well outages after 2023 to minimum threshold levels: 14
- Consistent with previous GSP estimate for well outages at the soft landing

## **B.3.4. Evaluation of how proposed management may impact environmental users such as GDEs**



# Impacts to GDEs

- Monitoring added (stream and rain gage, groundwater levels) to assess conditions in areas identified as potential GDEs
- Biologist to conduct updated GDE assessment (spatial coverage, health) in 2025





Thank You