Water Resiliency Integrating Groundwater in Healdsburg Through (RIGHT) ASR Wells

Russian River Watershed Association, October 11, 2022

Introduction

Presenter – Patrick Fuss, P.E.

– Utility Engineering Manager with the Municipal Utility Department in Healdsburg, CA

Purpose – This presentation is part of the public outreach to make other water users in the area aware of the Healdsburg ASR Well project and to learn of any issues / concerns that can be addressed as the project moves forward.

Today's Presentation

- Healdsburg water supply
- Impacts of the drought on the water supply
- What the future may hold for surface water
- Groundwater as a possible solution
- ASR (aquifer storage and recovery) as a method to make groundwater use sustainable
- Healdsburg Water RIGHT ASR Project status
- Questions/ Discussion

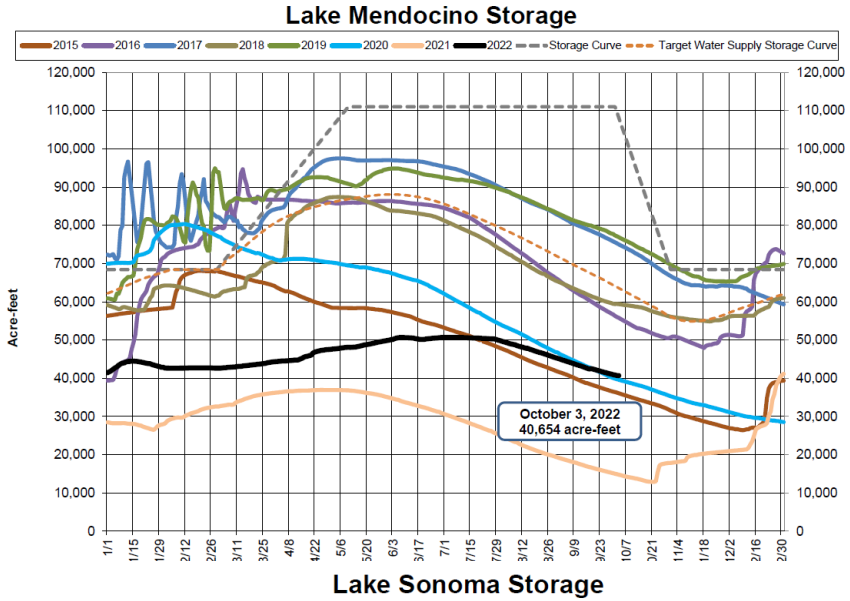
Healdsburg Water Supply

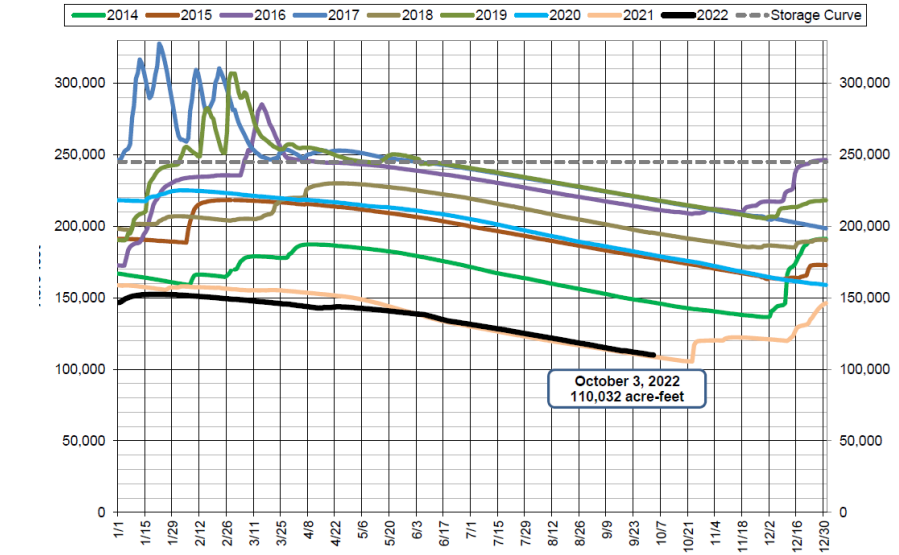
The City of Healdsburg currently derives all of its potable water supply from surface waters (9.39 cfs in surface water rights during the summer, 5 cfs in winter)

The City also has a water purchase agreement with Sonoma Water for up to 9.75 cfs and up to 425 acre-feet of volume annually.

- The Gauntlett, Fitch, and CSA/Fitch Mountain water rights are from the Russian River
- Dry Creek water right is from Dry Creek.
- Water purchased from Sonoma Water may used at any of our diversion points when City rights are not available.

The Water Supply Situation





Water reserves in the storage reservoirs have been in short supply.

- Increased flow from Lake Pillsbury has increased levels in Lake Mendocino for 2022 compared to 2021.

- Without the Lake Pillsbury flow, Lake Mendocino would likely match 2021 levels, as Lake Sonoma has.

Drought Impacts on Healdsburg

During current drought

- All of the surface water rights for the City were curtailed in 2021
  - Petitioned for water sufficient for public health and safety equivalent to 112 gpcpd
  - 40% conservation required of the residents
  - City enacted a recycled water hauling distribution program to help the residents get through the 2021 emergency.

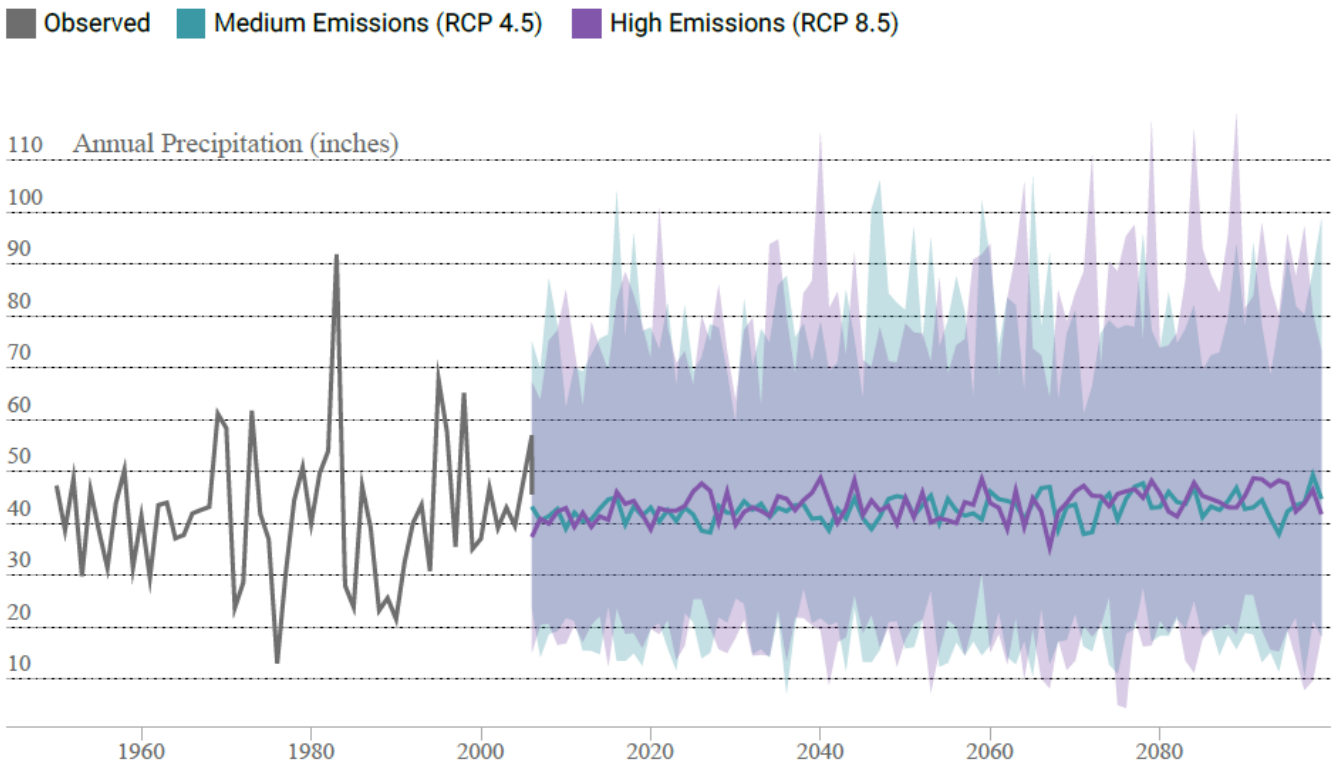
Drought Impacts on Healdsburg

During current drought

- In 2022, only the Dry Creek water right was not curtailed
  - Dry Creek water right is 1 cfs (0.64 mgd)
  - Demand is approximately 1.7 mgd with mandatory 20% conservation
  - Balance has been made up by use of some of the Healdsburg portion of a 10,000 AF reservation in Lake Mendocino

What the Future may Hold

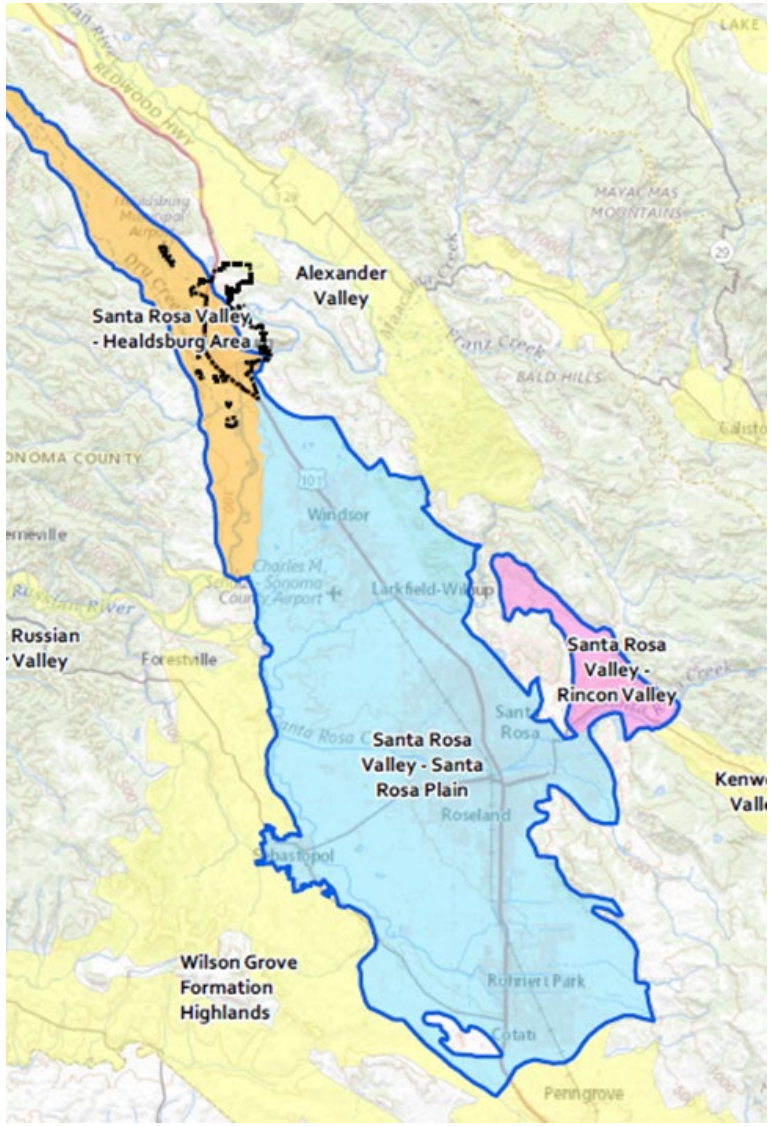
In light of the changing climate, average rainfall is expected to remain about the same, but with bigger swings between wet and dry periods



Cal-Adapt Forecasts – Healdsburg Precipitation

Groundwater as a Supplement to Surface Water Supplies

- The City of Healdsburg currently derives all of its potable water supply from surface waters, potentially subject to curtailment during drought
- Access to water not subject to surface water right curtailment would help the City increase reliability of its water supply.
- Healdsburg is located over the Healdsburg Area and Alexander Valley subbasin aquifers.
- Both aquifers are deemed low priority for overdraft by the State under the Sustainable Groundwater Management Act



Groundwater / ASR Feasibility Investigation

- Staff have identified three potential sites for the groundwater wells / ASR project
- The City owns these sites and has rights to the water beneath them.
- The sites have the appropriate infrastructure accessible to make a well any of these locations feasible.

Groundwater / ASR Feasibility Investigation

DWR Bulletin 118 for the Healdsburg Area and Alexander Valley subbasins indicates that approximately 100 gallons per minute per well is potentially achievable.

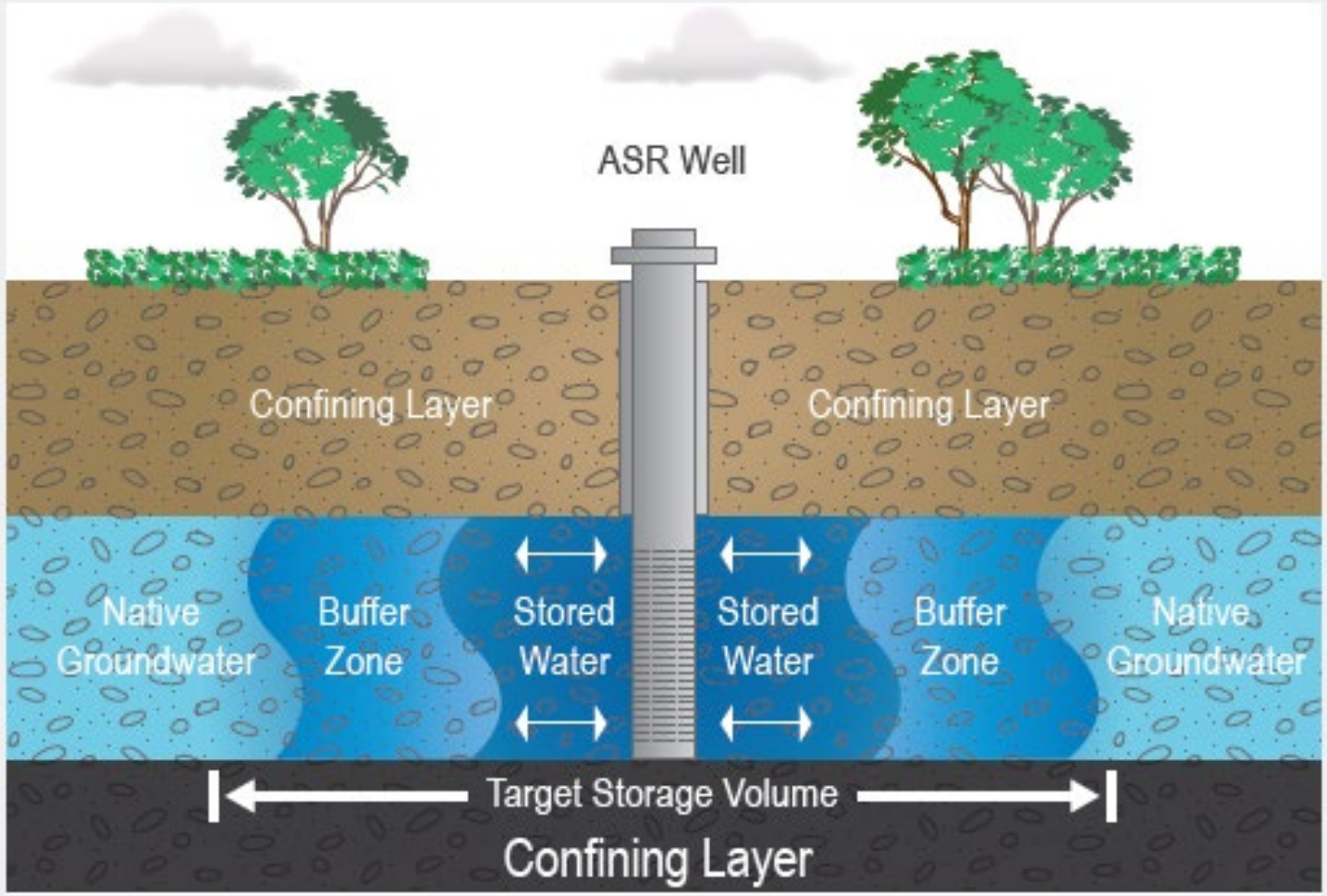
Three sites at approximately 100 to 130 gallons per minute equates to 0.43 mgd to 0.56 mgd – or approximately 36 to 47 gallons per person per day, which can help the City more easily achieve drought conservation goals.

Actual well performance will be determined by field exploration to precede design.

Groundwater / ASR Feasibility Investigation

- Aquifer storage and recovery (ASR) will make the project sustainable.
- ASR will allow the City to store water underground when surface water is plentiful and use it when surface water is scarce
- ASR also will prevent the aquifer from becoming over-drafted.

What is ASR?



ASR Discussion

- ASR wells allow water to be stored during plentiful periods
- Water injection rates are about 0.5 times water withdrawal rates, can be over 100 MG per year
- Injection replaces groundwater used, and can impound water for future use
- Some treatment will be required – water to be injected will be from Healdsburg distribution system – dechlorination is likely.

Project Status

- Feasibility study has been conducted by GEI Consultants with favorable conclusions, February 2022
- Numerous grant applications have been submitted, and FEMA's 2021 BRIC has received favorable review from CalOES for technical merit and benefit cost ratio
- 2021 BRIC Grant is under FEMA review. If granted, 70% of the $8.6 million will be funded ($6.2 million federal share)
- Funding may be 1.5 to 2 years out
- Project will take approximately 36 months to complete

Questions / Discussion