

CONSIDER CREATION OF CIP PW 22-36 FOR AQUIFER STORAGE AND RECOVERY, AND APPROVAL OF AGREEMENT WITH CAROLLO ENGINEERS, INC. AND RELATED BUDGET AMENDMENT

CITY COUNCIL REGULAR MEETING

ITEM 5.3, JANUARY 10, 2022



BACKGROUND



- ❑ The City's drinking water comes from two sources, local groundwater and surface water purchased from the South San Joaquin Irrigation District (SSJID).
- ❑ The City's water supply is reliable and staff has taken the necessary steps to plan for future growth and the corresponding water needs, however, there are some risks that are especially challenging to plan for.
- ❑ These risks include but are not limited to; prolonged droughts, new State regulatory requirements, emerging groundwater contaminants, and management of upstream reservoirs.
- ❑ To mitigate these risks and further protect the City's water supply needs, staff is requesting that City Council consider creating a Capital Improvement Project (CIP) to evaluate the use of Aquifer Storage and Recovery (ASR).



ASR – PROPOSED PROJECT

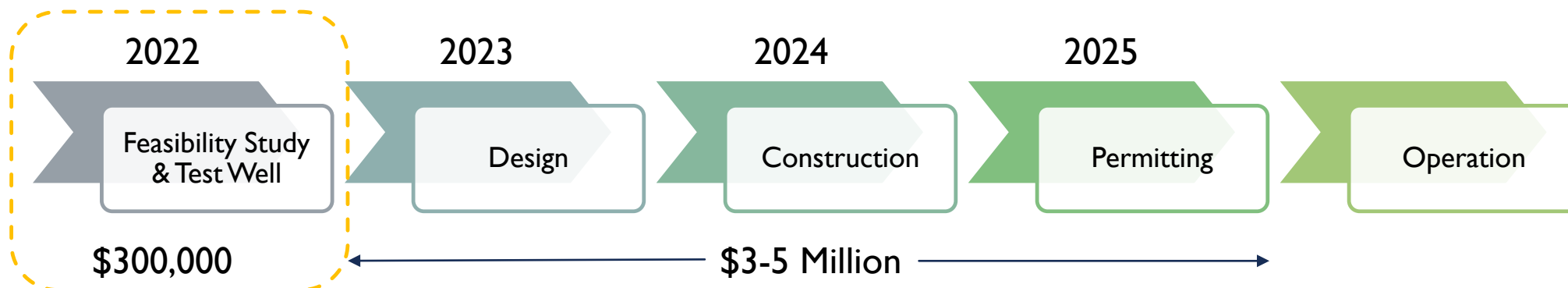
ABOUT

- ❑ Aquifer Storage and Recovery (ASR) is a water supply strategy. ASR does not create water.

HOW ASR SYSTEMS WORK

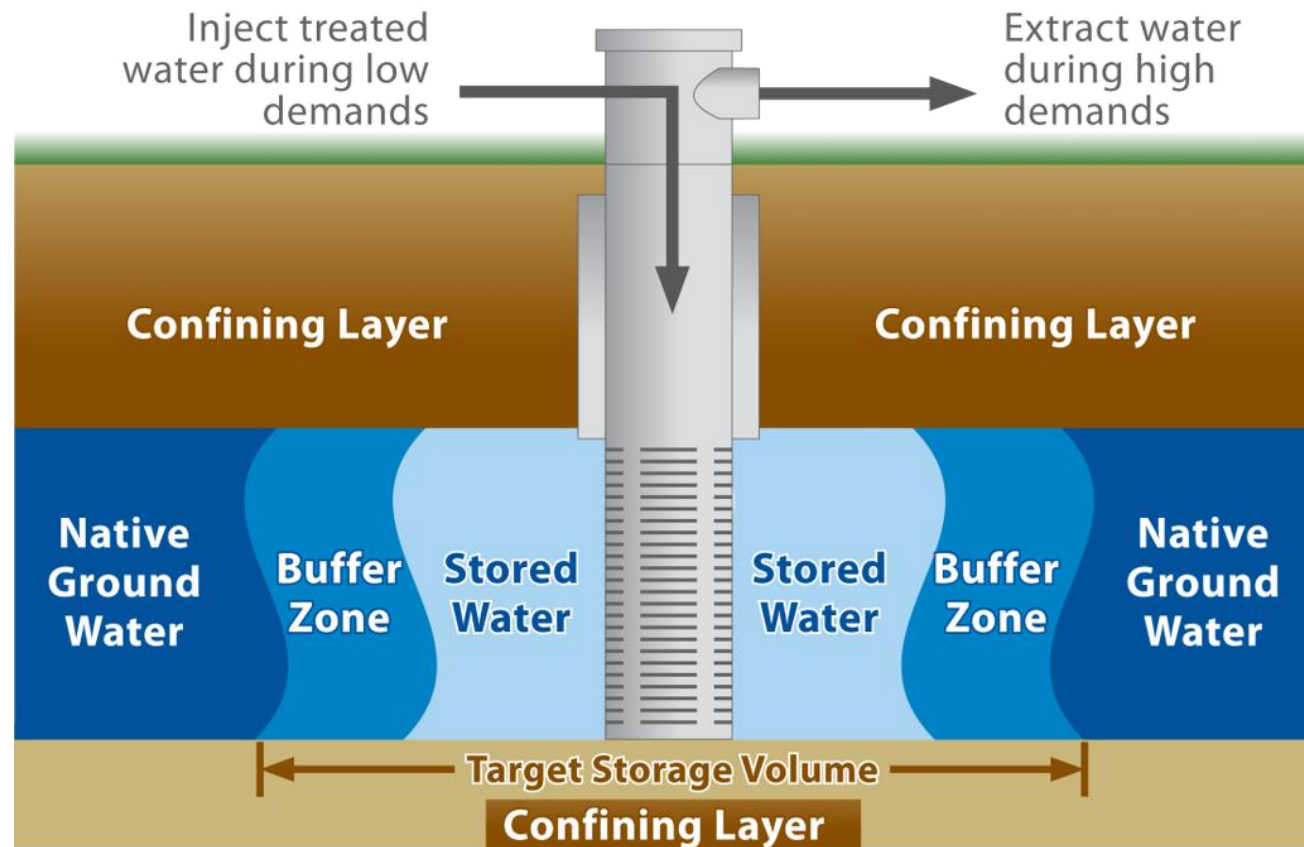
- ❑ When water supplies are plentiful, an ASR system will store available drinking water a natural aquifer underground. When our regular water supply becomes low, stored water is pumped out of the aquifer, treated to meet drinking water standards, and distributed to customers.

TIMELINE – LONG TERM PROJECT



Funding: Building Resilient Infrastructure and Communities (BRIC)

WHAT IS ASR?



Graphic Source: <https://www.trwd.com/aquifer-storage-may-become-the-next-big-player/>

ASR ACROSS THE COUNTRY AND LOCAL



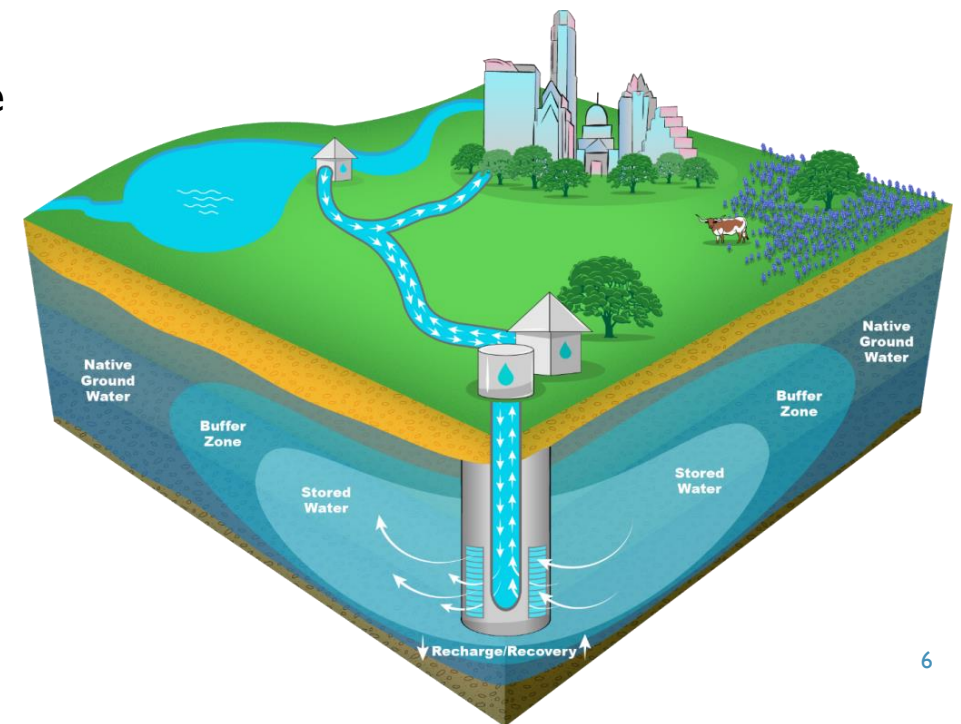
Woodland, CA - ASR





POTENTIAL BENEFITS OF ASR

- ❑ Long-term storage or water banking to improve water supply reliability
- ❑ Improve water quality
- ❑ Seasonal storage
- ❑ Reinforce surface water rights through demonstrated ASR storage
- ❑ Hydraulic control of contaminant plumes
- ❑ Enhance conventional wellfield production
- ❑ Raise groundwater levels
- ❑ Maintain distribution system flow and pressure
- ❑ Reclaimed water storage for reuse
- ❑ Defer the need for additional capital investment



Graphic Source: <https://www.austintexas.gov/department/water-forward-drought-supplies>



FEASIBILITY STUDY COMPONENTS

- ❑ ASR Objectives
- ❑ Water Supply, Water Demand, and Water Quality
- ❑ Disinfection of the Recharge Water
- ❑ Hydrogeology
- ❑ Storage Zone and Well Site Selection
- ❑ Conceptual Design of ASR and Monitoring Wells
- ❑ Preliminary Baseline and Cycle Testing Program
- ❑ ASR Economics
- ❑ Legal and Regulatory Issues
- ❑ Recommendations and Timeline

