Albuquerque Bernalillo County
Water Utility Authority

Agenda Item No. 10b

Meeting Date: October 22, 2014
Staff Contact: Katherine Yuhas, Water Conservation Officer

TITLE: OB-14-17 - Aquifer Storage and Recovery Presentation

ACTION: None

SUMMARY:
Beginning later this month, the Water Authority will begin storing water in the aquifer beneath Bear Canyon Arroyo under Permit No USR-2 from the Office of the State Engineer. Water will be released into the arroyo and allowed to infiltrate to the aquifer. The project will operate during the winter months when water demand and evaporation are lowest. Plans are to infiltrate 400 acre-feet from October – December 2014 and another 400 acre-feet from January – February 2015 for a total of 800 acre-feet this winter. This is the first project of this type to receive a permit for full-scale operations in New Mexico.

Design of a second aquifer storage and recovery project at the San Juan – Chama Drinking Water Plant is being completed and an application for a demonstration permit with the Office of the State Engineer will be submitted. This project will inject water into the ground through two types of wells, one which penetrates all the way to the water table so the water is injected directly into the aquifer and the second which releases water above the water table and allows it to percolate down to the water table. The Authority will be monitoring how both types of wells perform to determine how best to infiltrate water at this location.

These types of projects are critical to future water resources management in our service area. These projects are already called for in the approved Water Resources Management Strategy under Policy C. They will help build and maintain a drought reserve, reduce our impacts on the river, reduce evaporative losses, allow for storage of water in an account that is not subject to appropriation and will not require water rights offsets when recovered, allow for full utilization of the drinking water project, reduce ground water pumping impacts during the summer months and reduce our need for additional above-ground reservoirs.

FISCAL IMPACT:
None at this time.

FISCAL IMPACT:
None.

ABCWUA Aquifer Storage and Recovery

Katherine Yuhas, ABCWUA
Amy Ewing, P.G., DBS&A

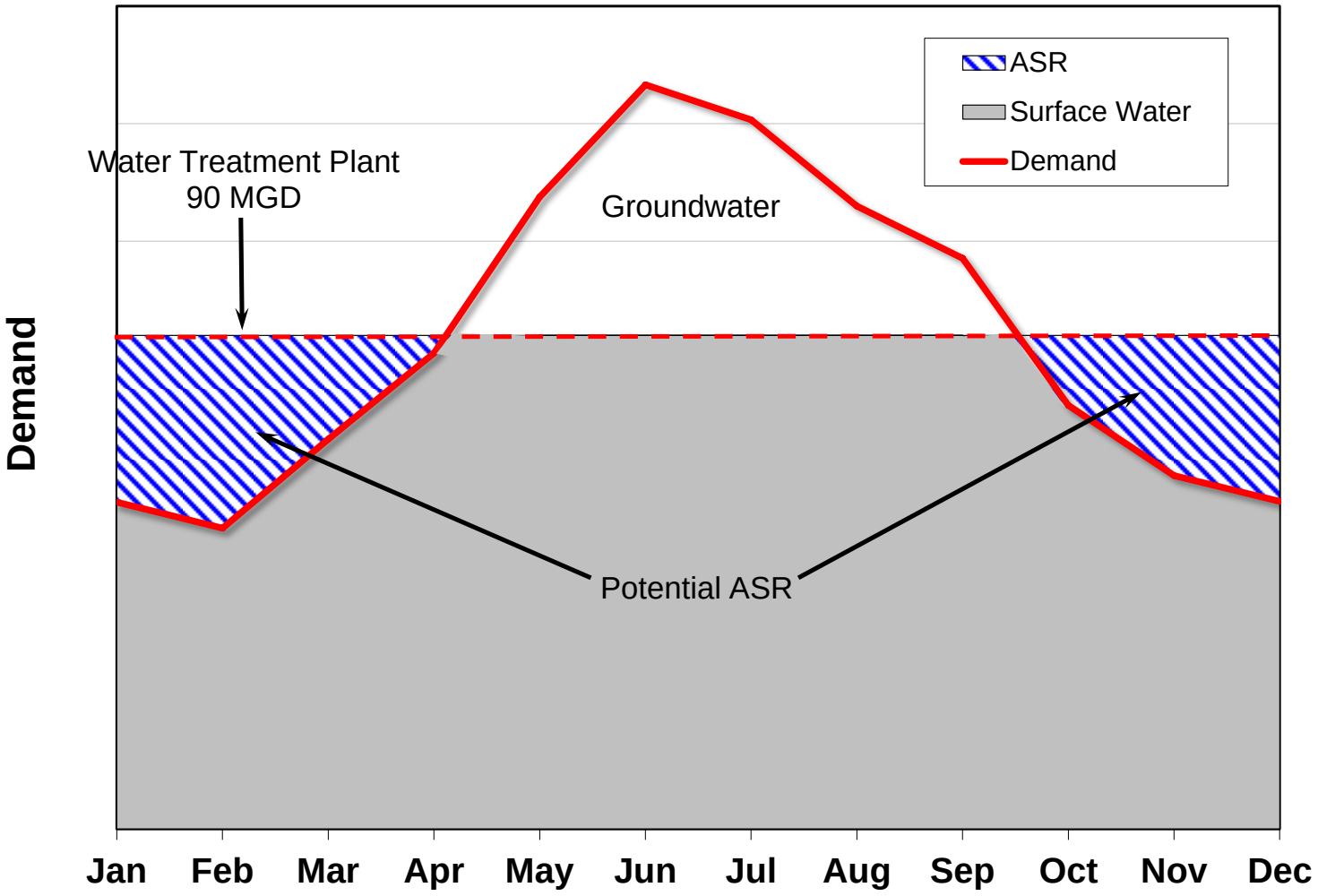
Albuquerque Bernalillo County
Water Utility Authority

ABCWUA ASR Overview Presentation
Water Utility Authority Board
October 22, 2014

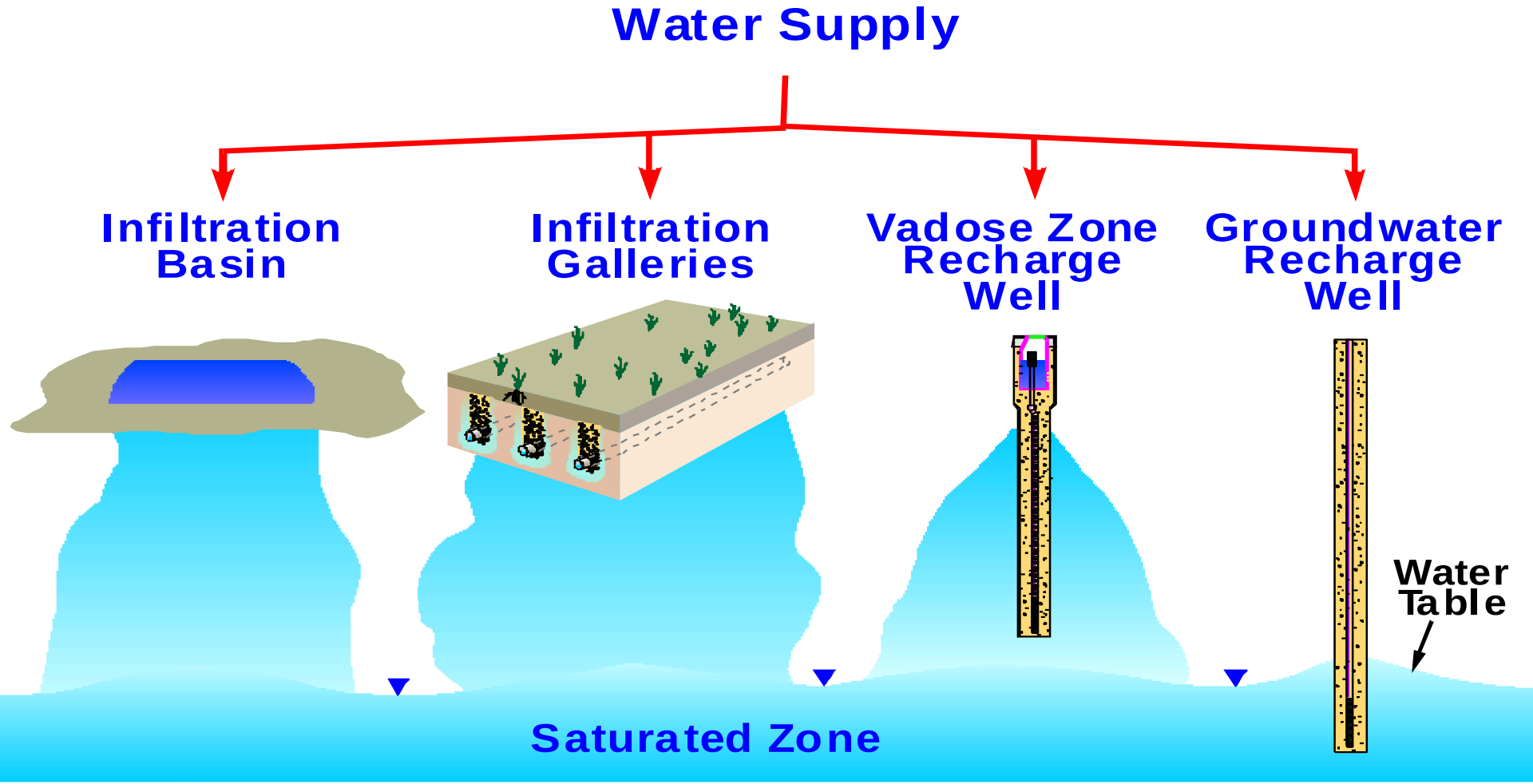
Aquifer Storage and Recovery - Policy C of the Water Resources Management Strategy

- Establish a groundwater drought reserve that maintains sufficient water in storage in the aquifer to provide water supply during drought.
- Maintain water levels so that a drought reserve will be accessible without causing adverse impacts to the aquifer.

ABCWUA ASR


ASR
Surface Water
Demand
Water Treatment Plant
90 MGD
Groundwater
Potential ASR
Demand
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec

Aquifer Recharge,
…..and then Storage, and Recovery



Projects In Other States

- California
  - More than 65 water agencies in the state operate groundwater recharge programs and ASR is an integral component of the State Water Plan
- Arizona
  - The Department of Water Resources reports 73 artificial recharge facilities in the state
- Colorado
  - In 2004, there were more than 150 active aquifer storage and recovery projects in the state

New Mexico Projects

- To date, the OSE has issued three underground storage and recovery (USR) demonstration permits.
  - Bear Canyon Recharge Demonstration
  - City of Rio Rancho Direct Injection
  - City of Rio Rancho Mariposa Water Reclamation
- The first full-scale permit was issued for Bear Canyon in August 2014.

New Mexico Projects

- Las Vegas, New Mexico has applied for a demonstration permit.
- The Pojoaque Basin Regional Water System Project is evaluating the feasibility of a project.

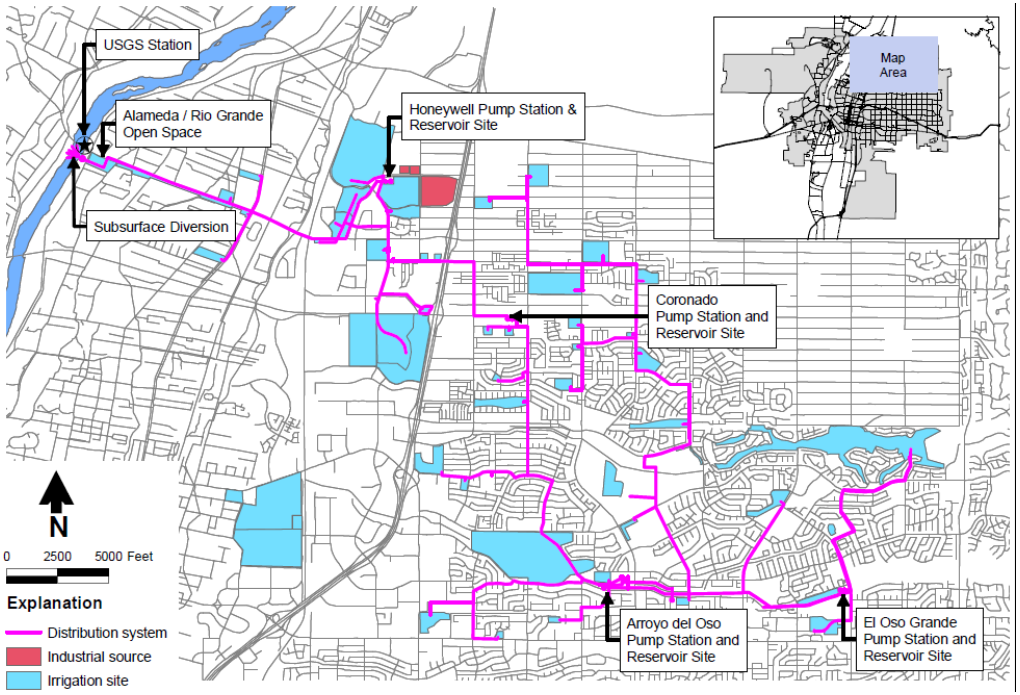
ABCWUA Projects

- The project purpose is to recharge the Santa Fe Group aquifer system of the Middle Rio Grande Basin and to recover the water for later use.
- ABCWUA has completed one demonstration project (Bear Canyon Recharge) and is now evaluating multiple projects for storing up to 20,000 acre-feet per year.

Bear Canyon Recharge

- Utilizes in-stream infiltration in Bear Canyon Arroyo
- Recharge source water comes from the North I-25 Reuse System (Rio Grande diversion)
- Full-scale permit has been issued
- Will operate October 2014-February 2015
- Four interpretive signs will be installed to inform the public about the project

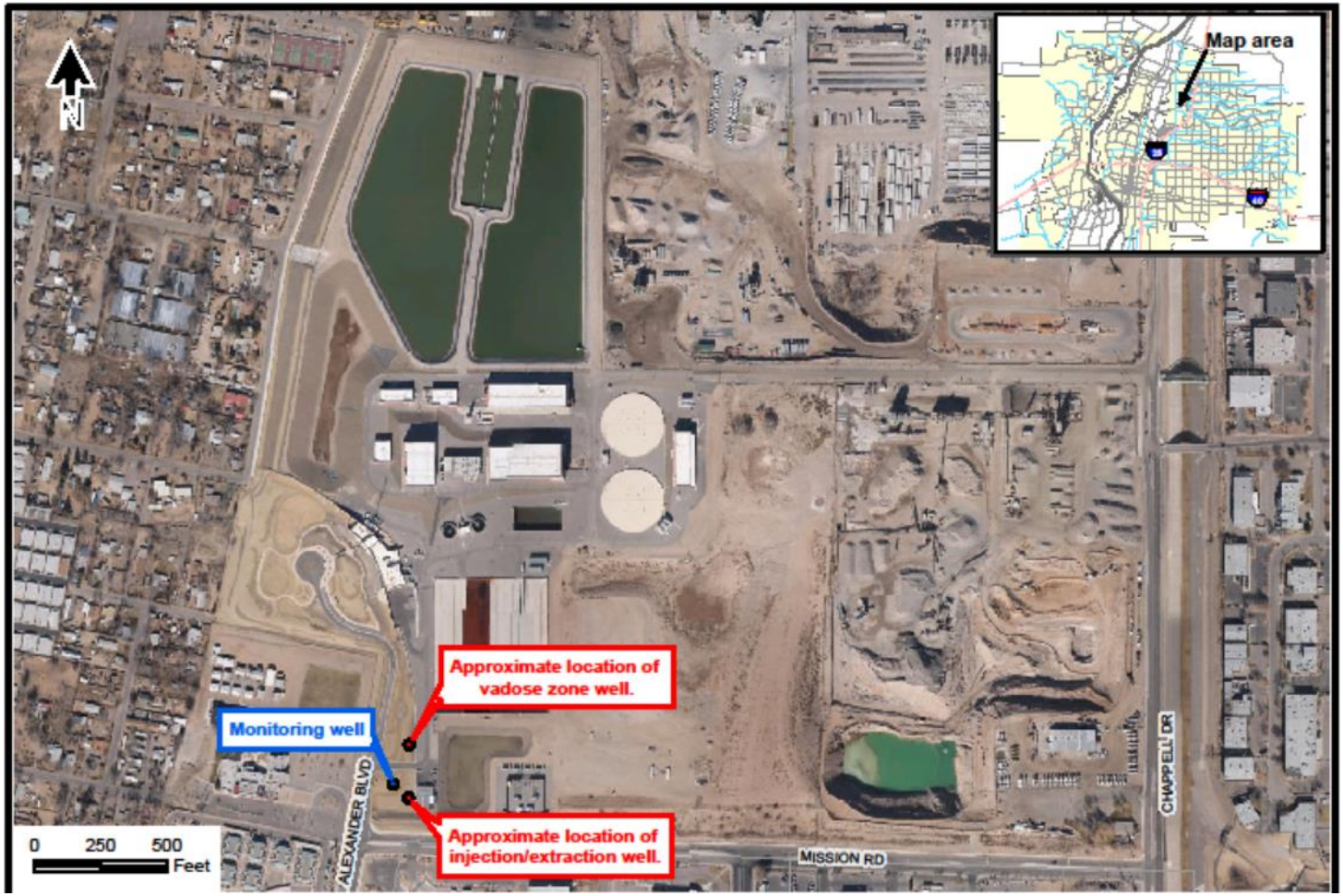
Bear Canyon Recharge



Large-Scale ASR

- Drinking Water Treatment Plant project
  - Demonstration project will include one new ASR well and one vadose zone well at the DWTP
  - Nearing completion of the project design
  - Working to obtain a demonstration permit from the New Mexico Office of the State Engineer
  - Recharge source water is San Juan-Chama water diverted from the Rio Grande and treated at the ABCWUA Drinking Water Treatment Plant

Large-Scale ASR



Large-Scale ASR - Costs

- Permitting
- Design
- Construction
- Operations
- Annual monitoring and reporting
- Well O&M events (every few years)

Large-Scale ASR - Benefits

1. Preserves and protects the aquifer
2. Reduces our impact on the river
3. Promotes good water resources management
4. Reduces evaporation losses
5. Storage of water in separate OSE account which is not subject to appropriation

Large-Scale ASR - Benefits

6. Later recovery does not require water rights offsets
7. Allows for full implementation of the DWP
8. Reduces groundwater pumping in the summer months
9. Reduces need for additional reservoirs
10. Complies with Policy C of the Water Resources Management Strategy

Questions?