

USE AND RECHARGE OF A SHALLOW AQUIFER IN REDWOOD CITY CA

AN EXAMPLE WITH ZERO OUTDOOR MUNI WATER USE

BRIAN SCHMIDT

USE AND RECHARGE OF SHALLOW AQUIFER



Partial overview: single home backyard system, with well, pump, storage and drip line distribution

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D



Backyard overview: pavement removed to increase planting area, allows more recharge.

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D



USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D

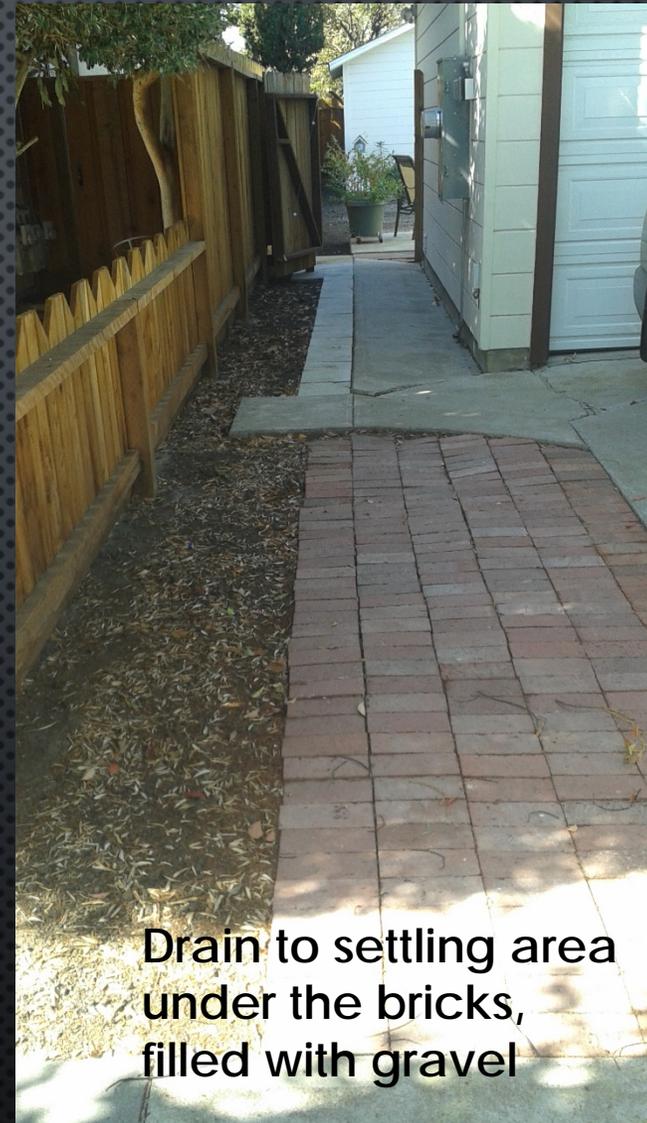
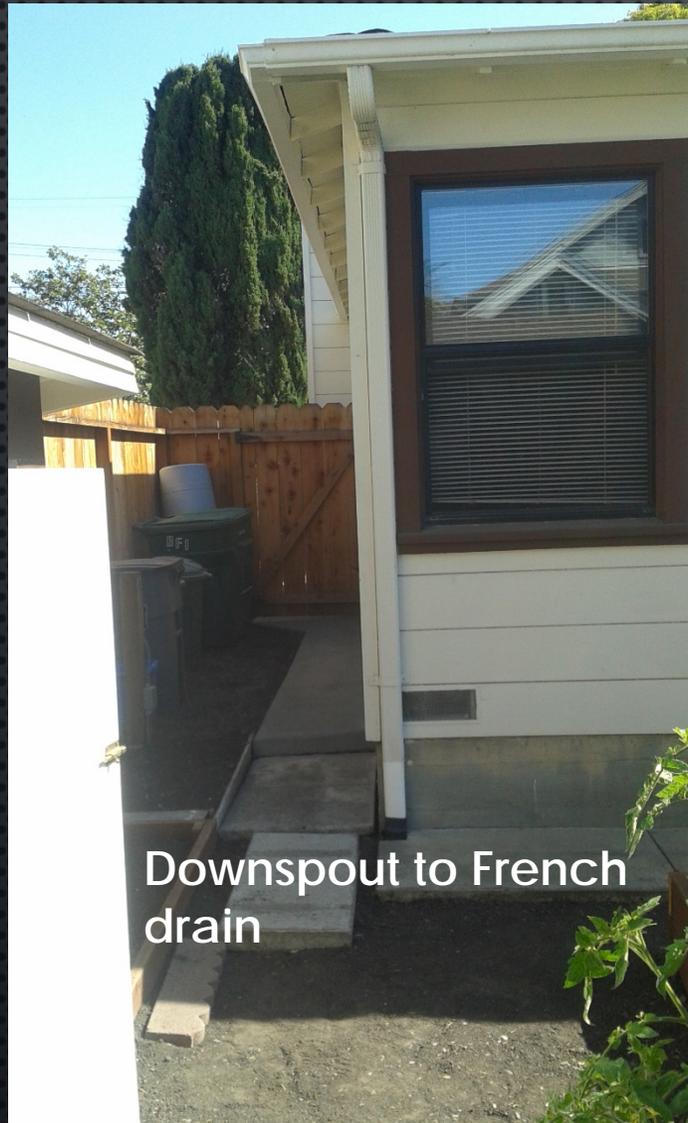


30' deep well is typical



Simple pump system switches on at low pressure in storage container, off at higher pressure

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D



USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D.



More typical front yard for house, also watered only by pump system

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D.

Example summary:

- Maximize percolation of rain and landscape water
- Zero use of municipal water on outdoor landscape
- Homeowner uses 1 to 2 units monthly
- Permits cost \$160 year in Redwood City
- Estimates pumping costs at few dollars/month in dry season
- Cost efficient now, likely to be even more in the future

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D.

Reasons for Water District interest:

- Outdoor use single biggest part of commercial and residential use
- More sophisticated use and recharge of shallow aquifers done in Australia
- Potential for indoor non-potable use
- Encourages maximum permeability and infiltration
- Investigate potential potable use in emergency situations

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D.

Risks and limitations:

- Not every location
 - Near streams
 - Where there is no shallow aquifer
- Not every home and business
- Water quality
- \$ - less in, more out

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D.

Role of Water District:

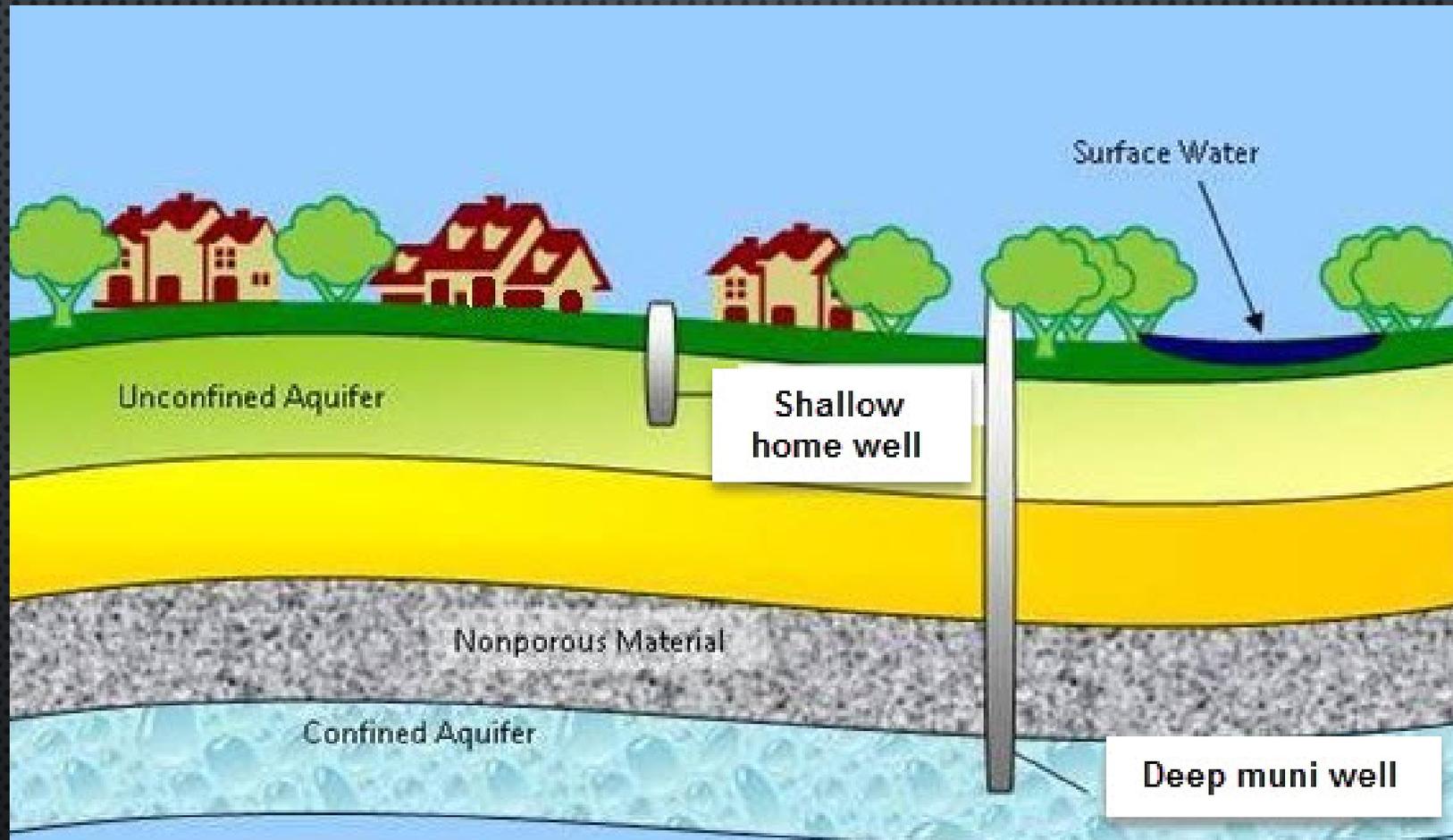
- Similar to District role in landscaping, esp. public education
- Appropriate city ordinances
- PACE funding
- Monitor water quality and water levels
- Pursue state and federal grant monies, future Safe Clean Water 2

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D.



Questions?

USE AND RECHARGE OF SHALLOW AQUIFER, CONT'D.



Simplified shallow/deep distinction