League of Women Voters of San Joaquin County
Groundwater Forum
March 21, 2015
O'Connor Woods – East Room
(Notes by Susan Loyko)

Introduction by Jane Wagner-Tyack - Welcome to the day's presentation of speakers to help us better understand what in the world is going on underground

Welcome by LWVSJC President Dr. Kathy Schick. Acknowledgement of representatives of elected officials in attendance Gary Prost (Congressman Jerry McNerney); Gustavo Medina (Assemblywoman Susan Talamantes Eggman); Mayor Steve DeBrum (Manteca). Special guests Barbara Hennigan and her husband, Bob, from Red Bluff. Barbara created the Black Box A for groundwater demonstrations.

Brandon Nakagawa, Water Resources Manager, San Joaquin Co. Public Works

- Groundwater is everywhere under our feet. Drawing from the groundwater basin as we speak.
- Groundwater fills the pores between the sand, rocks and gravel. It's .6% of the hydrosphere (liquid water component of the Earth). Groundwater is 35 times more than in our streams, rivers, etc.
- Groundwater is resupplied through infiltration and is part of the water cycle (precipitation, infiltration, evaporation, condensation, etc.)
- We pump groundwater for use in agriculture, municipal services and mixes with surface water.
- Groundwater moves very slow depending on slope of the land. More water in the mountains.
- We're losing streams to saturate surfaces and recharge. We're out of balance due to overdraft withdrawal. The Delta-Mendota Canal is 30% lower.
- Water draws deplete the groundwater basin which compresses the soil and doesn't come back due to land subsidence, lessening of the total storage capacity of the aquifer system.
- Declining groundwater levels from the 1940s show we're on a "precipitous decline" in our groundwater at the rate of 1 ½ foot per year. This is unsustainable.
- The drought from 1988-92 created a serious decline in groundwater. County agencies began to work together. Increase use of surface water helped to reduce the decline in groundwater.
- Other threats to groundwater include naturally occurring salinity and chloride (Stockton). Salinity in water causes a bad taste in the water, makes it unusable for crops and drinking.
- In 1972, the County officially began measuring groundwater levels. In 1992, at the end of the drought there should have been a significant

decrease in groundwater levels but there wasn't due to recharge. Groundwater storage is now getting us through the current drought. 300 wells are now being monitored.

- Why did this happen? Changes in the crops that were planted (e.g., vineyards in place of other crops which use ½ to 1/3 less water), use of surface water, irrigation efficiencies, urban conservation, etc. Today's demand is 70% of historical average groundwater use 1976-1996. Since 1980, there has been upward of $700 million in conjunctive use projects such as the Delta Water Supply Project, in a coordinated use of water.
- Ag is conserving more water. It doesn't make economic sense for farmers to overuse water.
- Other risks to groundwater levels include longer periods of natural droughts, induced droughts caused be increased allocations of water to fish and wildlife, loss of senior water rights, conversion of dry grazing land to irrigated agriculture (about 70,000 acres). Urban growth occurs other water uses have taken place.
- Formation of the Eastern San Joaquin Groundwater Basin Authority was created to develop locally supported groundwater projects to strengthen water supply reliability in Eastern San Joaquin County and give the County a bigger voice in the fight for our water rights. The Authority also works to get grant funds such as from Proposition 1 with its $7.5 billion.
- The Eastern San Joaquin Co. Groundwater Basin Authority has been monitoring the State Legislature as they deal with the Sustainable Groundwater Act which is like "watching sausage being made." The Legislature wants to invoke land use with Groundwater use and is requiring local water agencies to develop. Some of the issues faced in developing the plan include chronic groundwater levels, reduced storage, seawater intrusion and water quality contaminants.
- What is needed is comprehensive legislation to manage sustainable levels - develop high/medium priority basins, form a groundwater storage agency, develop a groundwater storage plan.
- The Legislature is using a carrot/stick approach. If the locals don't develop the language, the State will which will mean more regulations, loss of local control, and more money charged to local agencies, and subsequently the public.

Ken Vogel, former San Joaquin Co. Supervisor

- Admitted he is no longer on the Board of Supervisors so his comments "will be more political."
- The Board of Supervisors has opposed the State's groundwater legislation which is an attempt to put it in the Bay Delta Conservation Plan, giving the State more authority and flexibility to transfer water throughout the State. Due to the current drought, there is no interest from the State to develop the needed groundwater legislation.
- The State also wants to tie-in beneficial use, that means the water being used wisely in California when water is drawn.

- East Bay Municipal Utility District (EBMUD) has certain water rights and is in partnership with the Eastern San Joaquin Co. Groundwater Basin Authority. EBMUD is also being looked at by the State as to whether it is making beneficial use of its water. If not, the State would be allowed to ship water wherever in the state.
- The County has 300 wells it monitors but has to get permission from the State to use that water. State counts them as unmonitored because the County "doesn't meet the beneficial use criteria. For years the County has monitored these wells. Now the Stae requires permission to use the information of the well and the property owner. Since the County does not have the written permission to release property owner information/well information, the State considers the wells unmonitored. "The State is playing games".
- The County has a timeline (2017) with which to meet the State's groundwater requirements. The County has met with the Dept. of Water Resources to discuss criteria for monitoring wells. The State is developing the guidelines for the groundwater requirements but they won't be available until 2016 which doesn't give local agencies to develop their plans.
- "The State is acting like judge, jury and executioner. The State wants control of surface and groundwater".
- An example would be the desalination project, Poseidon, in San Diego. The State changed the project requirements which tripled the cost of the project and shut it down. Is this the best way to manage?
- Only 28% of rainfall and snowfall used in California. We need more storage for both surface and groundwater.
- The Central Valley Project (CVP) was to be the solution for water distribution in the State. We are five million acre feet short, a tug of war between north and south California. For example, there is no requirement for water development with the Wild and Scenic designation. Should we? We have a lot of water.
- There was an advisory vote to develop a groundwater use plan in 6 California counties. We need to find ways to bridge the difference for a sustainable water supply.

Tom Flynn, former San Joaquin Co. Public Works Director (retired) and Board Member of the North San Joaquin Water Conservation District – filling in for Joe Valente, Board President of the NSJWCD

- The District was formed in 1948 to supplement and manage groundwater and is located in and around the City of Lodi.
- The District has had a dramatic over-draft. To build above ground structures is too expensive. Underground is the way of the future.
- Prop 218 hampers all districts. Powers and authority don't have to manage groundwater pumping. The District was created when the federal government managed water resources. In 1956, water rights were given to EBMUD at 20,000 acre-feet.

- The system is old and antiquated. The 55-acre district expanded to 150,000. No taxes are paid to the District. There was an initiative that could have generated $200,000 a year but it failed. Could have been marketed better but the anti-tax folks opposed. The Board has to look at things differently.
- The Tracy Lake Groundwater Project can do much to help with groundwater recharge. Other districts had surface water but our District has fallen behind because of a lack of surface water.
- It's nice to find common solutions. If we don't, others will and send our water elsewhere.
- Thanks to the League of Women Voters of San Joaquin Co. for this forum. The public needs to understand the problems.
- The southside pump station is antiquated and is going to need to be updated. We have had some help with a $22 million investment to pressurize the system which provides more benefits.
- EBMUD used to be the enemy but no more. We still have to negotiate but EBMUD gets the importance of a groundwater basin. They could extract half of what they store.
- We would rather not take EBMUD recharge but give that water to the farmers which would further recharge the groundwater. If we don't get the system in alignment, property owners will protest taking the water from their properties.
- Bigger growers understand the water problem and the importance the District will play to make them successful. Farmers understand the cost of recharge so it's a win-win. Government can't solve the problem alone. We need to marry with other for success.
- The project will be ready by fall but there may be no water.
- With Prop 218, the increase fees of water can be looked at from the business point of view. Farmers recognize it will give them more of a reliable source of water. Strength comes in numbers.
- We're forming a panel to look at the Mokelumne River but we'll look at it as one big family.

Scot Moody, General Manager, Stockton East Water District (with hand-out of his PowerPoint)

- New Hogan Dam has capacity for 325,000 acre-feet of water. It is currently at 15,000 acre-feet.
- New Melones Reservoir has no water.
- In a "normal year" SEWD will deliver 50,000 acre-feet or 16,291,440 gallons of treated surface water to the City of Stockton and Cal Water.
- In 2015, SEWD will only deliver 20,000 acre-feet.
- In a normal year, SEWD will deliver 31,000 acre-feet to ag customers. This year it will be 12.65 acre-feet.
- In a "normal year" SEWD will recharge 45,000 acre-feet into the groundwater aquifer by direct percolation.

- This year, and last, SEWD will not have water for groundwater recharge.
- All this adds up to 53,850 acre-feet or 17,220,052,080 gallons of water that must be taken from our groundwater aquifer.
- Multiply this by the number of irrigation and domestic water purveyors in San Joaquin Co.!
- Future SEWD projects include: Water Supply Enhancement Project (WSEP), wet year water rights and 230-acre direct recharge site.
- Potential study with regard to indirect recharge and the ability of customers to pump water to the District.
- The best way to put groundwater to use is recharge. In lieu, farmers pump water to SEWD and will use surface water.
- Impacts of 2014 Groundwater Legislation: extensive coordination between all water purveyors regarding governance structure; extensive coordination between all water purveyors regarding sustainability plan; protecting property rights with regard to water; many unknowns regarding regulations the State is currently writing.

Jeff Shields, General Manager, South San Joaquin Irrigation District

- In 2005, SSJID built 180,000 cubic feet domestic water plant used by the cities of Ripon, Tracy and Manteca. Still use groundwater to meet the State standards.
- Last year SSJID had a 20% reduction in water availability. This year the cities have been put on notice there will be another 20% reduction and SSJID must use surface water.
- This has already resulted in a drop in the water table.
- Woodward Reservoir has 35 acre-feet seepage normally. This year none to the groundwater table. This year we anticipate 20-foot drop.
- Exchequer Reservoir in under federal license and that water will be given to farmers.
- Don Pedro Reservoirs has 43% supply, should be 60%, but there is no snow pack.
- New Melones has a normal capacity of 600,000 acre-feet. In 2012, 1,510,000 average runoff.

In 2013, the useable storage for 2015	579,500
	442,000 (SSJID-OID)
Balance for BOR fish flows	137,500
	115,000 (OCAP fish flows)
	22,500 Sept.
Oct.- Dec. fish flows	65,000
(minimum requirement in Stanislaus)	
Shortfall	(42,500)

Feds will take SSJID water

- The expected water year inflow is 248,000 acre-feet or 23% of average.
- Stanislaus River is expected to have no water by Sept. What about

Oct. and Nov.?

- Look at the length of droughts. In the 70s and 80s it was 2-3 years. In the 90s and the 4th year of our current drought, there is a pattern.
- What's ahead?
  State Water Resources Control Board curtailment order
  Groundwater legislation implementation – regulations, adjudication
  San Francisco Delta Conservation Plan or Twin Tunnels
  Water Quality Control Plan for the Delta
- There were nine water bills before the Legislature that had groundwater language and the Governor signed the one that did not have recharge as a beneficial use.
- Outflow on the Stanislaus had 40% impaired flow as if reservoirs don't exist. There is no water beyond Oakdale.
- In Sept., New Melones will be under the State's plan.
- For the next five years we will be facing the State's Plan and Mother Earth's wrath. Pray for rain!
- Pressurized system will help with water rights.
- New computerized system at a cost of $15 allows farmers to use their IPhone to open the water gates, discharge water to ensure it hits the root.
- Save 80,000 acre-feet of water, the Dept. of Water Resources says we can't sell water so of no help to the State. Have to find efficiencies but farmers can't afford to pay without State help.
- Wells will dry up this year. Agencies need to work together, we have differences but we are respectful of one another.

Bob Granberg, Asst. Director of Municipal Utilities, City of Stockton

- Service area is north and south Stockton, Diamond Walnut.
- CalWater began service to the City in 1925 in the center of town. The City of Stockton took over in the 1970s. San Joaquin County provides service to areas near Lincoln Center and Colonial Heights, providing groundwater initially but eventually developed a surface water system.
- City of Stockton – 38%, CalWater – 57%, County pockets – 5%.
- The Delta Water Supply facility provides 33,600 acre-feet to meet the 1990 General Plan requirements.
- Water restricted in the spring due to the Delta Smelt and Longfin Smelt.
- The City has a 40-year purchase contract with the Woodbridge Irrigation District for 6,500 acre-feet (in-lieu conjunctive use).
- 1977-2012 the City used 60% surface water, 40% groundwater. In 2012, 90% surface water and 10% groundwater as a result of the Delta Water Supply Project.
- Water Code Section 1485 allows the City to take out of the River what it puts in. The intake and pump are on the San Joaquin River.
- Junior water rights holder we told by the State to stop pumping but the

City reminded the State of Section 1485 and the City can now turn on the pumps.

- The City could provide direct potable use water but due to the "yuck factor" only provide indirect potable use or retreated water for public use.
- The 2035 General Plan (2007) set as a policy to limit groundwater withdrawal to 2/3 of sustainable yield of the basin, 0.60 acre-feet per year as a management tool to determine when surface water needs to be developed. There has been a 15-20% reduction in per capita use in the last three years.
- Overall demand is the same at 2001. The drought will determine the current available resources. The City is working with its partners to make large investments in conjunctive use projects.
- The City has been the regional leader in the last four decades. The groundwater levels have risen 30 feet.
- Planning will prevent overuse of groundwater. The State should take notice of the City and County model.

Jane facilitated questions from the audience

- How do we get water back into the ground?
  Scot Moody – 1) natural percolation or seep, 2) injection which is politically divisive because well or treated water and inject into the ground. It's immediate but expensive and with lots of regulation. In-lieu for farmers.
- Prop 1 includes money for storage. Can that money be used for recharge?
  Tom Flynn – Small landowners putting in grapes and the water in domestic wells dropped. There is no authority to manage. Stanislaus has stated to address the issue in the eastern part of the County.

  Jeff Shields – San Joaquin Co. has a can't pump or export ordinance. Groundwater is considered a land right. Should we be pumping for farmers? Flood irrigating in March draws 5' of salty water. Haven't been told what to do.

  Prop 1 has money for storage, $2.7 million of $11 billion but not for building dams but for public benefit to offset fish and wetlands. $5 can be used to build dams. One proposal is to raise Shasta Dam but only capture every 10 years.

- What do we do for the fish?
  Jeff Shields – Was trained as a biologist. We're not in this alone. We're part of a system we have to respect and protect biological, native system. Stanislaus spent $1 million on biologists to make an investment in the river. 98% of the fish don't make it due to invasive species such as the Striped Bass which is a voracious predator. There

were 112 bass tournaments last year. We have to control introduced species. We owe it to the river.

Scot Moody – We use the same biologists on the Calaveras River. We're developing a conservation plan working with Fish and Wildlife to find a common sense approach.

- In Manteca, we have stormwater drains. Can we save that water for recharge?
  Jeff Shields – We have stormwater retention basins that are very productive for groundwater recharge. Prop 1 money is available for treating and capturing. Some of that water goes into the groundwater basin for recharge but most does into the Delta.

  Scot Moody – We have a $1 billion Water Supply Enhancement project to capture stormwater for use by farmer. 800,000 cubic feet of water goes into the Diverting Canal.

  Bob Granbery – Retention basins requirement daily management which is difficult. The City is purchasing water from the Woodbridge-Morada Basin on a trial basis. But the basic use is for flood control.

  Jeff Shields – California uses 33 million acre-feet of water from snow and rain, import groundwater in an average year. 60% of water comes from surface, 40% from the ground.
  39.87% - Agriculture
  31.22% - Wild and Scenic applied water
  10% - Urban use
  8.6% - In stream
  7.97% – Regular Delta outflow
  1.83% - Managed wetlands

- How can we get a San Joaquin lobbyist to represent our needs?
  Ken Vogel – The County does have lobbyists.

  Scot Moody – The San Joaquin Co. Farm Bureau has lobbyists in Sacramento. Money is an issue.

  Brandon Nakagawa – We have prominent advocates but what's the message? We want to bring solutions to the table.

  Jeff Shields – The Farm Bureau is the best advocate. Boxer, Feinstein, altho' at different positions, Denham, McNerney have knowledgeable staff members. It's not a Democrat or Republican issue. Denham does have a problem. His district has changed and is now in the SSJID which does not support the BDCP.

- The canals are all open to evaporation and water loss. Wouldn't a covered system be better and prevent water loss?
  Scot Moody – If pressurized, don't always get the natural percolation
  Jeff Shields – Canals covered and lined in the SSJID. We have 350 canals and the majority are piped. We stopped irrigating in sandy soils. There is no good answer. Unintended consequences.

  Brandon Nakagawa – Grapes, walnuts are we getting all the water from the American River? EBMUD spends $1 billion.

- Plume migration, how prevalent is it and how can we stop it?
  Jeff Shield – Nitrates from fertilizers is the largest in the San Joaquin County. Use surface water. The State has a nitrate plan. Dairy farmers have to report nitrate levels but they don't always get it right but they are getting better. Pressurized systems can help.

  Natural ammonia, salts are found in surface water. Water softeners have large amounts of salts. We have to figure out how to stop that.

Jane thanked everyone for attending and concluded the workshop.