

**MINUTES OF THE JUNE 16, 2014
BOARD OF DIRECTORS' MEETING
WATER RESOURCES ASSOCIATION OF YOLO COUNTY**

1. CALL TO ORDER & INTRODUCTIONS

The meeting was called to order at 3:00 p.m. by Chair, Bill Marble.

Board members present: William Marble – City of Woodland, WRA Chair
Cecilia Aguiar-Curry – City of Winters, WRA Vice-Chair
Jim Mayer – Yolo County Flood Control & WCD
Robert Thomas – Reclamation District 2035
Matt Rexroad – Yolo County

Alternate members present: Tim O’Halloran – Yolo County Flood Control & WCD, WRA Treasurer
Duane Chamberlain – Yolo County
Kurt Balasek – City of Winters

Associate members present: Lynnel Pollock – Cache Creek Conservancy

Member agencies absent: Dunnigan Water District
University of California Davis
City of Davis
City of West Sacramento
Reclamation District 108

Public & Agency Staff: Elisa Sabatini, Yolo County, WRA Technical Committee Chair
Cindy Tuttle - Yolo County
Herb Niederberger – City of Davis
Mark Cocke – City of Woodland
Tim Busch – City of Woodland
Max Stevenson – Yolo County Flood Control & WCD
Bob Schneider – Tuleyome
David Guy, Northern California Water Association
Katie Dahl, Association of California Water Agencies
Vicki Kretsinger, Luhdoff & Scalmanini CE
Jim Borchers, Independent Consultant
John McKean
Frank Sieferman
Elizabeth Case, The Davis Enterprise

2. APPROVAL OF AGENDA – The Board was unable to approve the agenda without a quorum present.

3. PUBLIC FORUM – None.

4. CONSENT ITEMS - The Board was unable to approve the consent items without a quorum present. The Board will need to convene a special meeting to approve items on this agenda.

- a. Approve minutes: March 17, 2014 Board meeting
- b. Receive minutes of Executive Committee (EC): 3/11, 4/15/14
- c. Receive minutes of Technical Committee (TC): 3/6/14, 4/3, 4/22, 5/1/14
- d. Receive TC Memo, Criterion for Drought Proclamation by Yolo County
- e. Approve annual Board meeting schedule 2015: 1/12, 3/16, 6/15, 9/21, 11/16/15
- f. Receive financial reports: March - May 2014
- g. Receive estimated FY2013-14 Year End Budget Report
- h. Approve FY2014-15 Project Fund Budget, TC Recommendations
- i. Approve FY2014-15 WRA Operating Budget, EC Report

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j. Receive Summary of WRA Accomplishments FY2013-14

5. INFORMATIONAL ITEMS

a. Report from the WRA Chair: At the last ACWA meeting, a moderated panel discussion was held regarding the Woodland Davis Surface Water Supply Project. Tim O'Halloran introduced Katie Dahl from ACWA who handles Region 4 business.

6. PRESENTATION: California Water Foundation's Subsidence Report, Vicki Kretsinger, President and Principal Hydrologist, Luhdorff & Scalmanini Consulting Engineers and Jim Borchers, Hydrogeologist/Independent Consultant. ***"Land Subsidence from Groundwater Use in California" (April 2014)***: <http://californiawaterfoundation.org/uploads/1398291778-SubsidenceSummaryreport-FINAL.pdf>

Tim O'Halloran introduced contributing author Vicki Kretsinger to present on a recently released report on land subsidence from groundwater use in California. Tim also acknowledged the recent passing of Joe Scalmanini who was a prominent groundwater authority in Yolo County for many years. Vicki introduced contributing author Jim Borchers, formally with the U.S. Geological Survey (USGS). Michael Carpenter, retired USGS, also co-authored this report. She also acknowledged the large group of contributors from the Subsidence Resources Group. (The PPT presentation will be available on the WRA's website: http://yolowra.org/meeting_directors.html.)

Jim began the presentation with a review of historic and recent subsidence locations around California. He explained how well pumping instigates subsidence with an illustration of a simple aquifer cross-section and how the clay and sand sediment layers are compacted. A well-known photo of Dr. Joseph Poland from 1977 shows the maximum recorded subsidence point of 29 feet southwest of Mendota in the San Joaquin Valley. Jim continued to discuss the various effects of land subsidence in California such as flooding, levee issues, canal repairs, and well damage. He discussed videotaped documentation of 80 well casings damaged due to vertical compression from 1974 to 1981 in Yolo County. These damages cost approximately \$7.2 million (2013 value estimate). Damaged wells were compared to intact wells in the same area. The only difference determined was that the water levels had drastically dropped in the broken wells. He illustrated with a map of damaged and non-damaged wells in Yolo County compared with GPS surveyed land elevation subsidence changes from 1999 to 2008. Jim explained the mechanics of aquifer system compaction as it relates to compacted fine-grain material (silt/clay) due to fluid extraction. The sand/gravel layer is coarser and more permeable. The silt/clay layer compacts 100 times more than the sand/gravel layers, which translate to land surface subsidence. As long as water levels do not drop below the previous historical low level, then subsidence is recoverable¹. However, once levels are exceeded this compaction becomes permanent. No amount of re-pressuring the aquifer can expand those sediments to their previous non-compacted state and raise the land surface.

Vicki continued the presentation with a discussion about the alarming rates of subsidence. The measurement of land surface changes has been documented by studies funded by USGS. Local networks, like in Yolo County, have been established to monitor subsidence and its impacts. Through the writing of this report, it was discovered that there is no statewide comprehensive monitoring

¹ *Post meeting comment by Jim Borchers*: The process can be substantially more complex if the clayey layers have not completely equilibrated with historically low water levels in the aquifer. If water levels rise before the clayey layers equilibrate then when water levels in the aquifer fall again, permanent compaction of the clay and irrecoverable subsidence can occur even if water levels in the aquifer have not dropped below historically low levels. This phenomenon has been observed in the San Joaquin Valley.

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program specifically to monitor land subsidence. Vicki elaborated on a few monitoring methodologies of specific interest in Yolo County. The USGS operates the Continuously Operating Reference Station (CORS) Network that has 284 Continuous Global Positioning System (CGPS) sites to monitor land subsidence. Pairing subsidence data with groundwater level measurements helps to assess land surface response to groundwater stresses. Another important monitoring method uses borehole extensometers (cable and pipe) to measure aquifer-system compaction. Extensometers measure changes at specific depth intervals within the aquifer. Extensometer data can provide more information about the cause of the subsidence when paired with groundwater level data. Vicki illustrated Yolo County data with an extensometer/CGPS graph of groundwater levels from Zamora and Conaway Ranch from 1992-2014.

The subsidence report outlined many recommendations. Vicki summarized some of the key recommendations:

- Establish a statewide program to monitor land subsidence
- Collect/analyze available satellite radar and GPS data to delineate areas where subsidence has occurred or is continuing
- Refurbish existing extensometers, evaluate data, recommend additional sites with co-located continuous GPS
- Describe the aquifer system to identify the sediments that compact and cause subsidence
- Evaluate changes in historical groundwater levels to relate changes in levels to rates of subsidence

Vicki and Jim answered questions from the Board and public. Historical information about the WRA's coordinated Yolo County's Subsidence Network Monitoring effort conducted for the last 12 years is included in this report. For more details about groundwater management and other studies, visit www.californiawaterfoundation.org.

7. UPDATE ON WATER LEGISLATION & REGULATORY ISSUES -

- a. Delta Update and FloodProtect: Cindy Tuttle reported that the FloodProtect Plan is in the final phase of development. They are currently accepting comments on the document. There will be a final plenary session in July prior to submitting the Plan to DWR. Next they will begin on implementation of plan components. Additionally Yolo County continues preparation of their comments on the Bay Delta Conservation Plan (BDCP) EIR/EIS.
- b. Legislation and Regulatory Update: David Guy, NCWA, reported that last week Senator Wolk working with Senator Steinberg amended her water bond bill to \$10.5 billion. She added some items that are important to Yolo County. There is a Delta component to the water bond bills that is still controversial because of its relationship to the BDCP. Assemblymen Perea and Rendon are continuing to work together to craft an assembly bill. David stated that both bills are quite similar at this point, which he attributes to a drought response dynamic. It remains to be seen what the legislature will accomplish prior to summer session closure. One unknown is that the Governor has still not formally weighed in on the bond. Again, if no agreement is reached on the proposed bill amendments, then the \$11.1 billion 2009 bond is still slated to be on the November ballot. Yolo County stated that at this time they are supporting Wolk's bond bill in concept.

The deadline for comments on the BDCP has been extended. A draft implementation agreement for the BDCP is also out for review. NCWA will be submitting significant comments on the Plan. Over the last several weeks the State Water Resources Control Board (SWRCB) has issued several curtailment notices. NCWA and consultants have been reviewing this process impacting

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the post-1914 water rights in the Sacramento River basin. They have agreed with the SWRCB's assessment that there is not sufficient water to support post-1914 water rights. The SWRCB scheduled a workshop for July 1st to discuss additional emergency regulations. David briefly discussed the complexities of a potential pre-1914 water rights curtailment regulation. David was asked to share NCWA's final BDCP comments with the WRA. Yolo County was asked to do the same.

- c. The "Year of Groundwater" Presentation: Tim O'Halloran explained that the WRA TC is focusing on groundwater issues this year, which is being driven by pending state legislation to develop sustainable groundwater management plans and a framework for plan enforcement. He reminded that California is so diverse that no one plan will address all economic and geographic issues. Tim has begun outreach to agencies around Yolo County by presenting the Year of Groundwater initiative. He gave an overview of activities in Yolo County such as the Groundwater Monitoring Program and the Yolo County Water Resources Information Database (WRID). He compared historical Yolo County groundwater trends to current conditions. Tim Busch, City of Woodland, shared groundwater well level trends tracked this year. In May, the City noticed a surprising 50 ft., drop in levels compared to historical 30-year low levels (averaged over all city wells) probably due to the large number of farmers pumping from their wells. Nitrate levels are also trending higher and faster than usual.

Tim O'Halloran transitioned to discussing groundwater regulatory initiatives and several core documents that are laying the groundwork for developing groundwater legislation (ref. Tim's PPT accessible on the WRA's website.) Currently there are three groundwater legislative proposals: Dickinson (AB 1739), Pavley (SB 1168) and the Office of the Governor's draft proposed legislation. These proposals have several common themes: defining groundwater sustainability, promoting local control and identifying who is responsible for enforcement if locals aren't showing progress on management.

Tim elaborated on collaborative groundwater projects done locally that put Yolo County in a strong position for demonstrating local control. Future groundwater activities proposed by Yolo County agencies demonstrates our responsibility to the state and establishes a strong local position. Tim listed examples of previous and proposed work. The Year of Groundwater initiative is being jointly sponsored by the WRA and the Yolo County Farm Bureau. Tim has or will give the Year of Groundwater presentation to the following agencies: Conaway Ranch (5/12), City of Winters (5/20), WRA Technical Committee (6/5), Yolo County Board of Supervisors (6/10), Yolo County Farm Bureau 6/10), Yolo County Planning Commission (6/12), Reclamation District 108 (6/16), WRA Board of Directors (6/16) and Yolo Ag and Food Alliance (6/23). The WRA Board agreed that the Year of Groundwater is a worthy pursuit for the TC. Tim's PPT presentation will be accessible on the WRA's website.

8. WRA TECHNICAL COMMITTEE (TC) UPDATE

- a. Technical Committee (TC) Activities Update: Elisa Sabatini, TC Chair, summarized the activities that the TC has been working on since the last Board meeting. She reviewed the TC recommendation regarding criterion for drought proclamation by Yolo County (Consent Item 4.d.). The TC developed recommendations for the FY2014-15 project fund budget allocations (Consent Item 4.h.). Elisa summarized those recommendations.
- b. Westside IRWMP Update: The Westside IRWM Summer 2014 Newsletter was included in the agenda packet. Elisa highlighted the important updates. The Westside IRWM Plan submitted to DWR has been conditionally approved and has entered a 30-day public comment period. The

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Westside IRWM Group will be applying for 2014 Emergency Drought Funding. A proposal is being prepared from projects submitted and selected from Yolo and Lake Counties. Elisa was asked to summarize the Yolo projects selected and submitted by the WRA TC.

- c. WRA Endorsement of ACWA's Statewide Water Action Plan, Adoption of Resolution #1401: The Board was unable to approve the Resolution without a quorum present. Elisa reviewed TC discussion about adoption of the *Statewide Water Action Plan* (SWAP) in response to Yolo County's concerns about endorsing the SWAP expressed at the March WRA Board meeting. No other WRA TC members identified concerns about the SWAP. TC consensus was that Yolo County's concerns did not outweigh the benefits to the WRA joining the coalition and endorsing ACWA's SWAP.

9. **PRESENTATION: Lower Cache Creek Feasibility Study Update:** Tim Busch, Principal Utilities Civil Engineer, City of Woodland, began the discussion with a historic review of annual rainfall in Sacramento. He illustrated with a graph demonstrating that after each severe drought year experienced in the Sacramento area within a couple of years there was increased rainfall events (data from 1850 to ~2010). Rainfall has averaged anywhere from 5 inches per year to over 35 inches. The next PPT slide compared the varying hydrology in Cache Creek after a flood event. The model is based on existing conditions in Lower Cache Creek for 25, 30, 50, 100 and 200-year flow at County Road 94B (Source: USACE). A flow rate of 30,000 cfs (200-year event) breaches the levees by overtopping. Tim reviewed the various historical flood events in Woodland from 1940 to 1997. A map illustrated the natural flow of overbank flooding that occurred in 1940 prior to the construction of Interstate 5. In 1983 there was a levee break near the Cache Creek Settling Basin that flooded what is now Woodland's industrial area near County Road 102. Some floodwater that would have previously gone north now flows into Woodland. The construction of Interstate 5 in the 1970's did not account for conveyance of 13,000 cfs through the floodplain. The 2003 Cache Creek hydrologic study for a 100-year flood event models the flood water flowing north (~13,000 cfs) toward the Colusa Basin Drain, but the majority flows (~38,000 cfs) through Woodland east of County Road 102. Tim discussed a newer flood study of existing hydrologic conditions prepared for the Lower Cache Creek Feasibility Study (LCCFS) for a 200-year flood event. He described the various flood depths around Woodland and how Interstate 5 east of CR 102 would be inundated with 8 feet of water. There is no natural outlet for this floodwater. The water would not recede until the levee was breached so water could return to the Yolo Bypass.

Tim reviewed some of the strategies being explored to reduce flood risk for Woodland. There are two flood studies that the City is currently developing. The US Army Corps of Engineers (USACE) Lower Cache Creek Feasibility Study was re-initialized in 2013 (3x3x3 process). The outcome of this study is to determine whether there is a Federal interest in implementation of a project. Project implementation is dependent upon Congressional authorization and appropriation of funds. Securing Federal funding is the biggest challenge to this project. The City is also initiating a joint study between the City and DWR to identify a project that advances flood risk reduction objectives as outlined in the Central Valley Flood Protection Plan. This parallel project is being undertaken because the State does have funding available to support flood project construction. This would likely happen sooner than Federal funding. A subset of this Joint Study is including Woodland flood risk reduction measures as part of a larger regional plan. One such measure is expanding the capacity of the Yolo Bypass to accommodate a 100-year floodplain event. This project has a broad support base and greater financial participation. The City is managing their work efforts to maximize coordination between the USACE and City/State studies for cost efficiency and to insure consistency between feasibility studies and regional planning.

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Tim summarized some of the City's accomplishments achieved on the USACE and Joint City/DWR studies. He also reviewed the SMART (Specific, Measurable, Attainable, Risk Informed and Timely) planning milestones for the USACE study. (All of these details can be viewed in Tim's PPT.) Twenty nine measures were identified under the USACE study. After a criteria screening process, eighteen of those measure were retained (9 structural and 9 non-structural). The criteria used ensured the measure was effective, implementable and efficient. The risk reduction measures considered for Woodland and Yolo were: containment, channel modification, non-structural measures, reduce risk to transportation infrastructure and reduce risk by using existing floodplain. A chart detailed how each of these measures rated after the screening criteria evaluation. Tim explained four alternatives that were brought forward from this process.

- *Alternative 1:* Maintain a *North Natural Bypass* with levee modifications to keep 30,000 cfs in Cache Creek and send the rest north up to the Colusa Basin Drain (preliminary consideration given to this alternative, no impact analysis on Colusa Basin Drain investigated).
- *Alternative 2:* Develop *South Bypass* (not the same alternative as the 2003 study); provide a conveyance channel north of Cache Creek/Woodland into the Cache Creek Settling Basin which would require some modification to the Settling Basin levees. It does not eliminate the floodplain to the north of Woodland, but it does not make it any worse.
- *Alternative 6:* *Fixing Levees in Place* by constructing new levees west of Woodland channelizing water into Cache Creek and out into the Bypass. New levees would also be constructed along the Settling Basin. This is a more expensive alternative because there are a lot of miles of levees to be constructed.
- *Alternative 7:* Similar to Alternative 6. The inclusion of a *Partial Setback Levees* alternative was requested by the USACE. This is also a rather expensive alternative. The City did not see this as a very viable alternative and would likely not be popular with the farmers north of the City.

Next steps are continuation with the USACE study and kicking-off the Joint City/DWR Study in the next several weeks. Tim answered questions on his presentation. Tim's PPT presentation is available WRA's website: http://yolowra.org/meeting_directors.html.

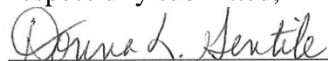
10. MEMBERS' REPORTS & FUTURE AGENDA ITEMS

Mark Cocke announced he will be retiring from the City of Woodland. Bill Marble acknowledged that he will be missed. No other member reports were given due to time constraints.

11. NEXT REGULAR MEETING: Monday, September 15, 2014 from 3-5 pm, Woodland Community Center. The Board will be convening a special meeting in June to adopt consent items and Resolution #1401, because we did not have a quorum today.

12. ADJOURNMENT: The meeting adjourned at 5:00 p.m.

Respectfully submitted,



Donna L. Gentile

Board Secretary & Administrative Coordinator